

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 4-30-07
 Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 10/531,208
 Mail Box and Bldg/Room Location: 9C15 Results Format Preferred (circle): PAPER DISK E-MAIL
(Rem)

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Pt. See B-6.

Inventors (please provide full names): _____

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr.

Earliest Priority Filing Date: _____

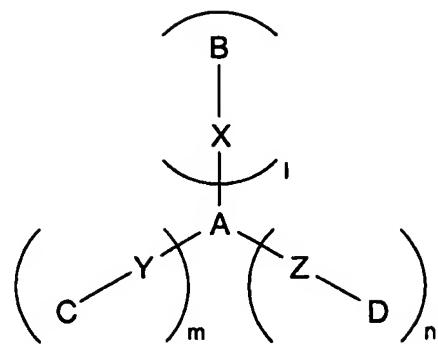
MAY : REC'D

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Pat. & T.M. Office

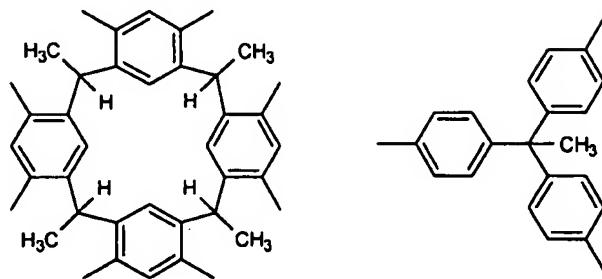
Please search for the organic compound of formula (1)
of Cl. #18.

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>EJ</u>	NA Sequence (#)	STN
Searcher Phoe. #:		AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	Questel/Orbit
Date Searcher Picked Up:		Bibliographic	Dr.Link
Date Completed:	<u>5-10-07</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:		Fulltext	Sequence Systems
Clerical Prep Time:		Patent Family	WWW/Internet
Online Time:		Other	Other (specify)

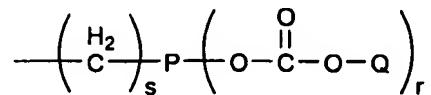


(1)

wherein A is an organic group represented by



each of B, C and D is independently tert-butyloxycarbonylmethyl, tert-butyloxycarbonyl or an organic group represented by



in which P is an aromatic group having a valence of $(r + 1)$ and having 6 to 20 carbon atoms, Q is an organic group having 4 to 30 carbon atoms, r is an integer of 1 to 10 and s is an integer of 0 to 10,

each of X, Y and Z is independently a single bond or an ether bond, and
 $l + m + n = 3$ or 8.

Claim 10 (currently amended): A photoresist composition comprising a solid content containing the photoresist base material recited in ~~any one of claims 1 to 7~~ claim 1 and a solvent.

Claim 11 (original): A photoresist composition comprising a solid content containing the photoresist base material recited in claim 9 and a solvent.

Claim 12 (original): The photoresist composition as recited in claim 10 ~~or 11~~, which further comprises an optically-acid-generating agent.

Claim 13 (original): A method for purification of a photoresist base material, which comprises washing the photoresist base material recited in ~~any one of claims 1 to 7~~ claim 1 with an acidic aqueous solution and treating the material with an ion-exchange resin.

Claim 14 (currently amended): The method for purification of a photoresist base material as recited in claim 13, wherein said acidic aqueous solution is an acetic acid aqueous solution.

Claim 15 (currently amended): A method for improvement of the photoresist base material recited in ~~any one of claims 1 to 7~~ claim 1 in radiation sensitivity, which comprises decreasing the content of basic impurities to 10 ppm or less.

Claim 16 (currently amended): A method for fine processing by lithography, which uses the photoresist composition recited in claim 10 ~~or 11~~.

Claim 17 (currently amended): A semiconductor device fabricated using the photoresist composition recited in claim 10 ~~or 11~~.

Claim 18 (original): An organic compound represented by the following general formula (1),

=> FILE REG

FILE 'REGISTRY' ENTERED AT 15:08:38 ON 10 MAY 2007
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=> D HIS

FILE 'LREGISTRY' ENTERED AT 11:22:37 ON 10 MAY 2007
E ADAMANTINE/CN

L1 1 S E5
L2 STR 768-90-1

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L3 50 S L2

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L4 198 S 638.8.1/RID
L5 STR
L6 15 S L5
L7 257 S 1839.6.36/RID

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L9 108589 S L7
L10 19885 S ((C (L) H (L) O)/ELS (L) 3/ELC.SUB) AND (L8 OR L9)

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L11 41681 S UEDA ?/AU
L12 36946 S ISHII ?/AU
L13 570 S L11 AND L12
L14 5993 S UEDA M?/AU
L15 4713 S ISHII H?/AU
L16 28 S L14 AND L15
L17 13402 S PHOTORESIST?/TI
L18 4 S L16 AND L17
SEL L18 1-4 RN

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L19 27 S E1-E27
L20 5 S L19 AND (L8 OR L9)
L21 14827 S L10 NOT PMS/CI
L22 27 S L2 SSS SAM SUB=L21
L23 STR L2
L24 SCR 1707
L25 50 S L23 AND L24 SSS SAM SUB=L21
L26 8407 S L23 AND L24 SSS FUL SUB=L21

SAV L26 LEE208/A
L27 20 S L2 SSS SAM SUB=L26
L28 STR L2
L29 SCR 1304 OR 1526
L30 16 S (L2 NOT L29) SSS SAM SUB=L26
L31 10 S (L28 NOT L29) SSS SAM SUB=L26
L32 STR L28
L33 0 S (L32 NOT L29) SSS SAM SUB=L26
L34 80 S (L32 NOT L29) SSS FUL SUB=L26
SAV L34 LEE208A/A
L35 51 S L34/COMPLETE

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L36 2 S L26 AND L19

FILE 'HCA' ENTERED AT 12:04:51 ON 10 MAY 2007
L37 1 S L36
L38 33 S L35
L39 51 S L34
L40 192166 S RESIST OR RESISTS OR PHOTORESIST? OR MASK? OR PHOTOMASK
L41 12 S (L37 OR L38) AND L40
L42 13 S L39 AND L40
L43 13 S L41 OR L42
L44 38 S L39 NOT L43
L45 9 S 1840-2002/PY,PRY AND L43
L46 24 S 1840-2002/PY,PRY AND L44

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L47 290 S C32H32O8
L48 1 S L19 AND L47

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L49 STR 65338-98-9
E TRIPHENYLMETHANE/CN
L50 1 S E3
L51 STR L49
L52 STR L32
L53 STR L51

FILE 'REGISTRY' ENTERED AT 13:25:49 ON 10 MAY 2007
L54 26 S L53
L55 48 S L53 AND L24 NOT L29
L56 5905 S L53 AND L24 NOT L29 FUL
L57 1566 S L56 AND (C (L) H (L) O)/ELS AND 3/ELC.SUB

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L59 220 S L58 AND L40

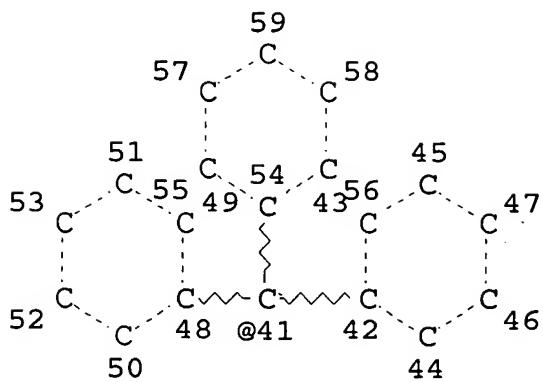
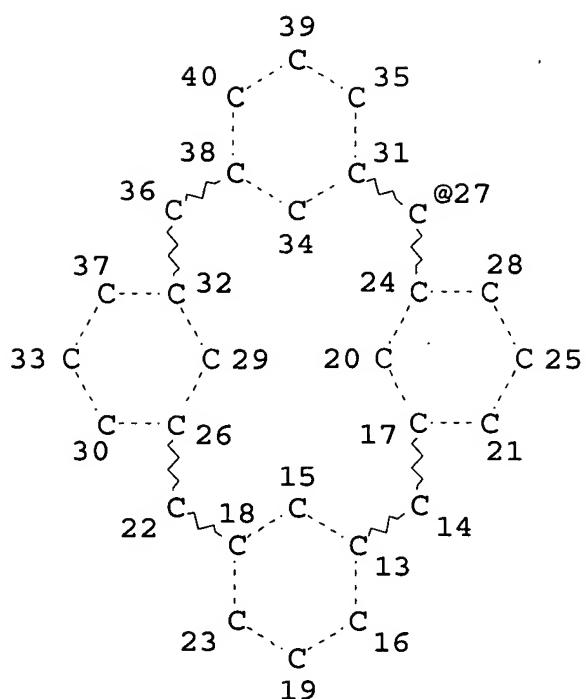
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L62 STR L60
L63 7 S L62 SSS SAM SUB=L56
L64 SCR 2043
L65 6 S L62 NOT L64 SSS SAM SUB=L56
L66 125 S L62 NOT L64 SSS FUL SUB=L56
SAV L56 LEE208B/A
SAV L66 LEE208C/A
L67 89 S L66 AND L57

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L69 75 S L68 AND L40
L70 65 S 1840-2002/PY,PRY AND L69

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=> D L66 QUE STAT
L24 SCR 1707
L29 SCR 1304 OR 1526
L53 STR



Ak~^O~^CH2
74 73 @72

61

Cb~^O~^CH2
77 76 @75

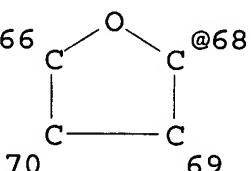
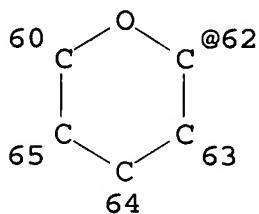
67

t-BuO @71

G1 78

G2 80

Page 1-A



Page 2-A

VAR G1=27/41

VAR G2=72/75/71/62/68

NODE ATTRIBUTES:

CONNECT IS M3 RC AT 47

CONNECT IS M3 RC AT 53

CONNECT IS M3 RC AT 59

CONNECT IS E1 RC AT 74

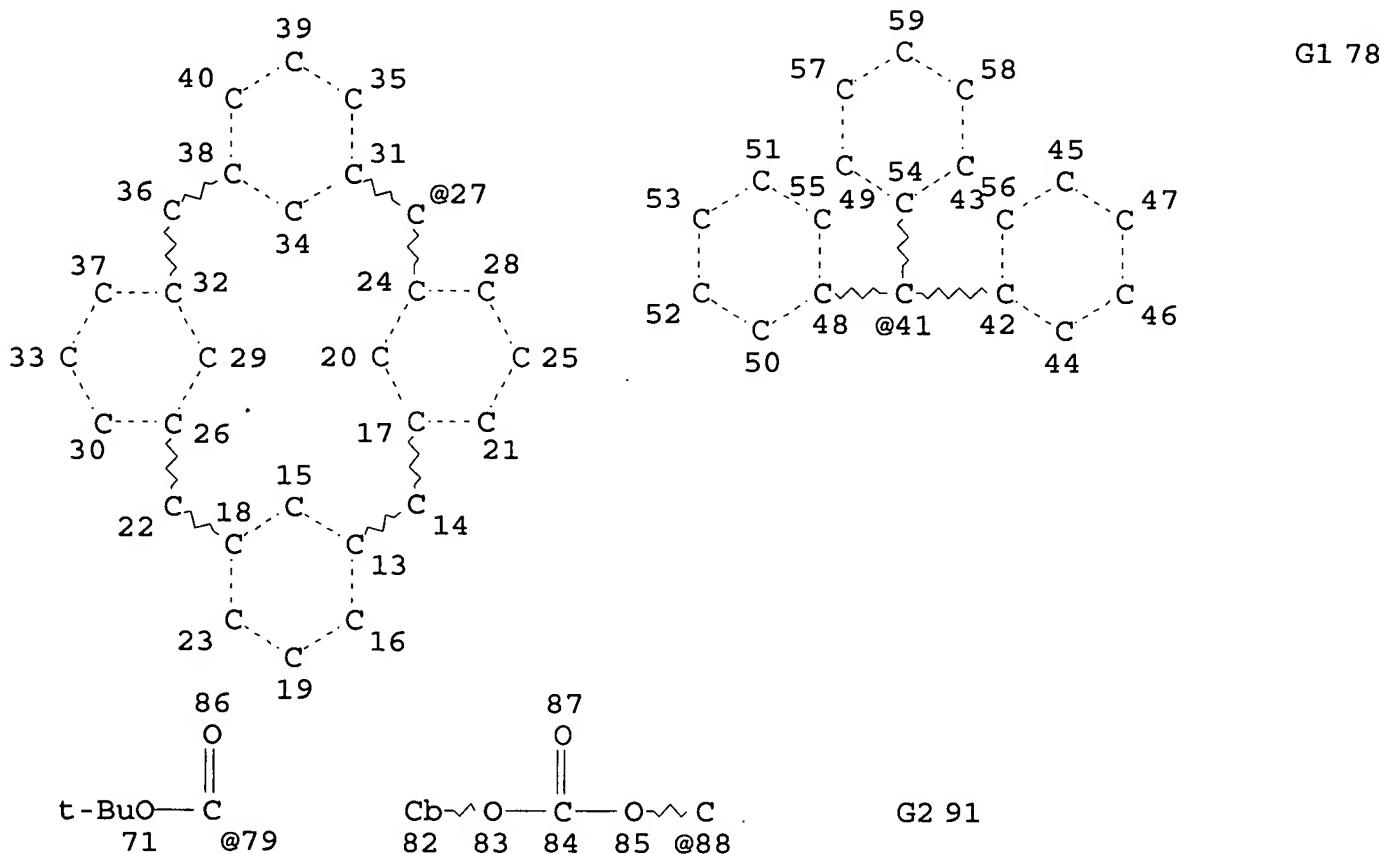
DEFAULT MLEVEL IS ATOM

GGCAT IS LIN SAT AT 74

GGCAT IS UNS AT 77
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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 NUMBER OF NODES IS 67

STEREO ATTRIBUTES: NONE
 L56 5905 SEA FILE=REGISTRY SSS FUL L53 AND L24 NOT L29
 L62 STR



VAR G1=27/41
 VAR G2=79/88
 NODE ATTRIBUTES:
 NSPEC IS RC AT 88
 CONNECT IS M1 C AT 16
 CONNECT IS M3 RC AT 47
 CONNECT IS M3 RC AT 53
 CONNECT IS M3 RC AT 59
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 58

STEREO ATTRIBUTES: NONE

L64 SCR 2043
L66 125 SEA FILE=REGISTRY SUB=L56 SSS FUL L62 NOT L64

100.0% PROCESSED 504 ITERATIONS 125 ANSWERS
SEARCH TIME: 00.00.01

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=> D L70 1-65 CBIB ABS HITSTR HITIND

L70 ANSWER 1 OF 65 HCA COPYRIGHT 2007 ACS on STN
140:383102 Photoresist base material, method for purification
thereof, and photoresist compositions containing the same.
Ueda, Mitsuru; Ishii, Hirotoshi (Idemitsu Kosan Co., Ltd., Japan).
PCT Int. Appl. WO 2004036315 A1 20040429, 56 pp. DESIGNATED STATES:
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI,
CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE,
NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.
APPLICATION: WO 2003-JP11137 20030901. PRIORITY: JP 2002-300144
20021015; JP 2003-112458 20030417.

AB The invention relates to photoresist base materials
consisting of extreme UV sensitive-org. compds. represented by the
general formula (B-X)₁(C-Y)_m(D-Z)_nA: [wherein A is a central
structure consisting of an aliph. group having C1-50, an arom. group
having C6-50 carbon, an org. group bearing both, or an org. group
having a cyclic structure formed by repetition of these groups; B to
D are each an extreme UV sensitive group, a group exhibiting a
reactivity on the action of a chromophore sensitive to extreme UV
rays, a C1-50 aliph. or C6-50 arom. group having such a group, an
org. group having both groups, or a substituent having a branched

structure; X to Z are each a single bond or an ether linkage; l to n are integers of 0-5 satisfying the relationship: $l + m + n < u > < /u >$ 1; and A to D may each have a heteroatom-bearing substituent]. The invention provides **photoresist** base materials and **photoresist** compns. which enable ultrafine lithog. with extreme UV rays or the like and is suitable for use in semiconductor device fabrication.

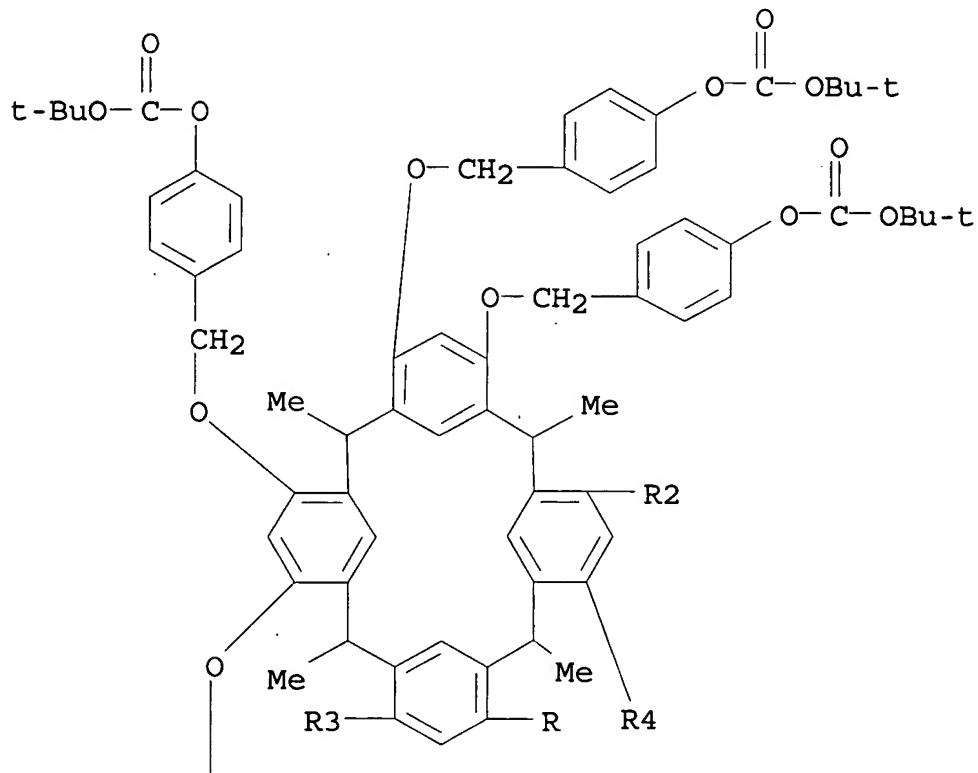
IT 683227-74-9P 683227-75-0P 683227-76-1P

(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)

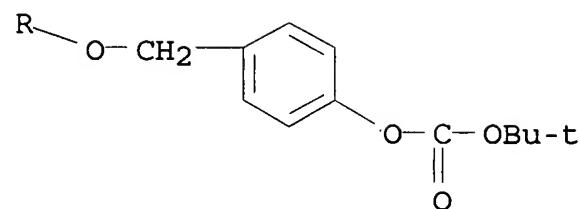
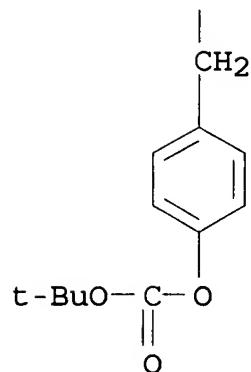
RN 683227-74-9 HCA

CN Carbonic acid, (2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.11 5,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl)octakis(oxymethyl-4,1-phenylene) octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

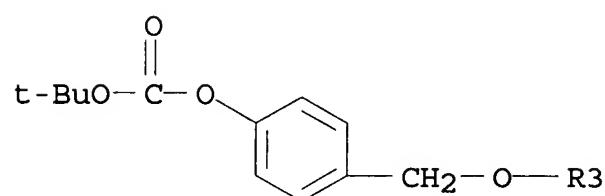
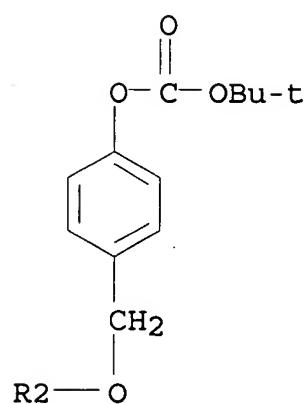
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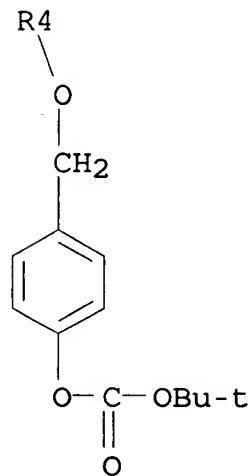
PAGE 2-A



PAGE 3-A



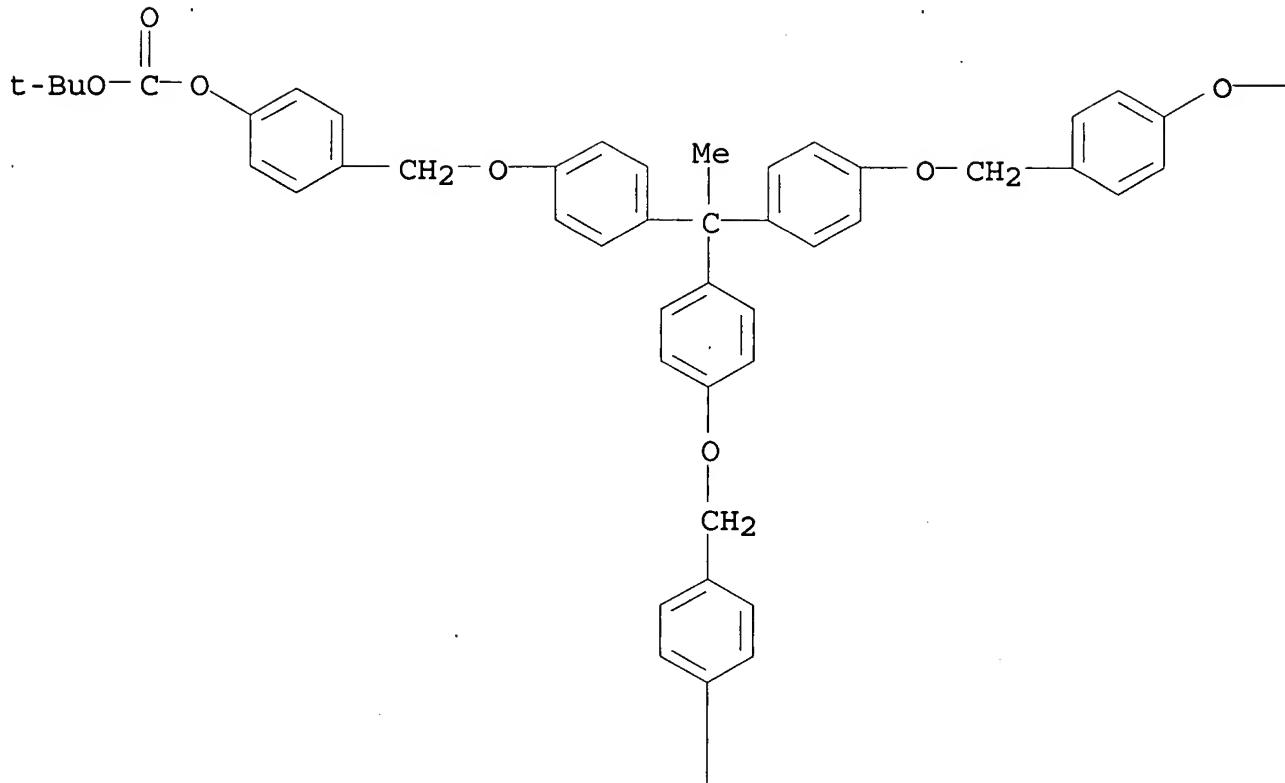
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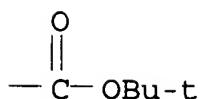
RN 683227-75-0 HCA

CN Carbonic acid, ethylidynetris(4,1-phenyleneoxymethylene-4,1-phenylene) tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

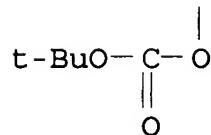
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PAGE 1-B



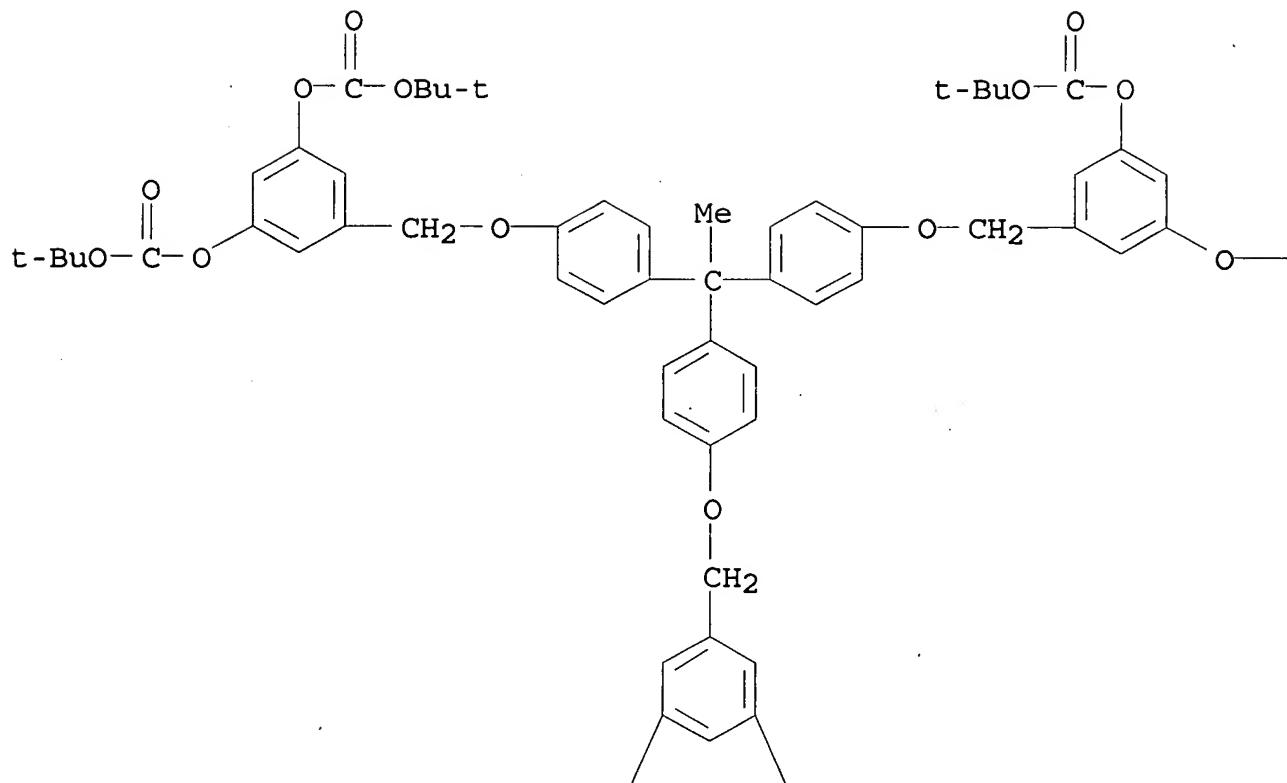
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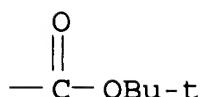
RN 683227-76-1 HCA

CN Carbonic acid, ethyldynetris(4,1-phenyleneoxymethylene-5,1,3-benzenetriyl) hexakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

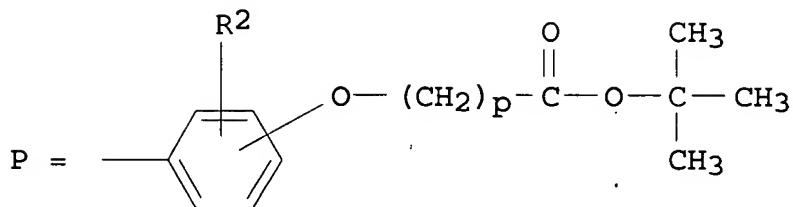
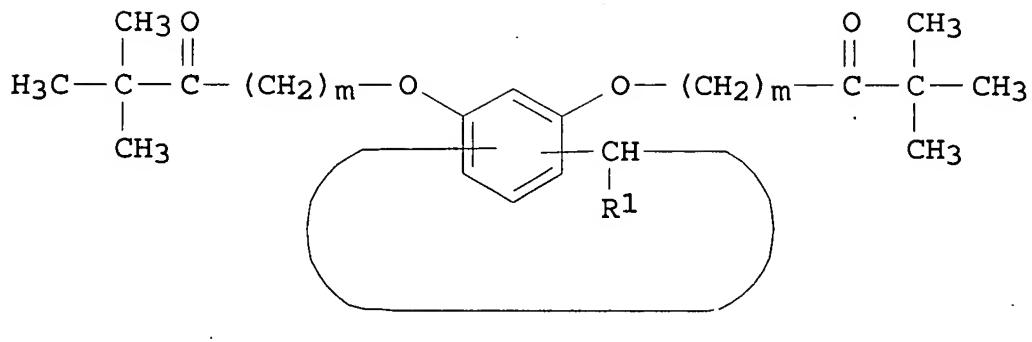


PAGE 2-A



- IC ICM G03F007-039
 ICS C07C039-17; C07C069-736; C07D309-04
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
- ST photoresist compn
- IT Light-sensitive materials
 Photoresists
 Recrystallization
 Semiconductor device fabrication
 (photoresist base material, method for purifn. thereof,
 and photoresist compns. contg. the same)
- IT Distillation
 (vacuum; photoresist base material, method for purifn.
 thereof, and photoresist compns. contg. the same)
- IT 65338-98-9DP, tetrahydropyranyl and benzyl deriv. ethers
 125748-07-4P, Calix[4]resorcinarene 211427-64-4P 683227-72-7P
 683227-73-8P 683227-74-9P 683227-75-0P
 683227-76-1P
 (photoresist base material, method for purifn. thereof,
 and photoresist compns. contg. the same)
- IT 75-07-0, Acetaldehyde, reactions 108-46-3, Resorcinol, reactions
 110-87-2, Dihydro-2H-pyran 623-05-2, 4-Hydroxybenzyl alcohol
 1927-95-3, 4-Bromophenyl acetate 5001-18-3, 1,3-
 Dihydroxyadamantane 5292-43-3, tert-Butyl bromoacetate
 24424-99-5, Di-tert-butyl dicarbonate 27955-94-8 29654-55-5,
 3,5-Dihydroxybenzylalcohol 99181-50-7, 1,3,5-Trihydroxyadamantane
 (photoresist base material, method for purifn. thereof,
 and photoresist compns. contg. the same)
- IT 156281-11-7P, 4-(tert-Butoxycarbonyloxy)benzylalcohol
 (photoresist base material, method for purifn. thereof,
 and photoresist compns. contg. the same)
- L70 ANSWER 2 OF 65 HCA COPYRIGHT 2007 ACS on STN
 139:388462 tert-Butoxycarbonylalkoxycalixresorcinarenes having high
 solubility in casting solvents and radiation-sensitive positive
 resists containing the same. Nishikubo, Tadaomi; Kudo,
 Hiroto (JSR Ltd., Japan; Kanagawa University). Jpn. Kokai Tokkyo
 Koho JP 2003321423 A ~~20031111~~, 18 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2002-133996 20020509.

GI



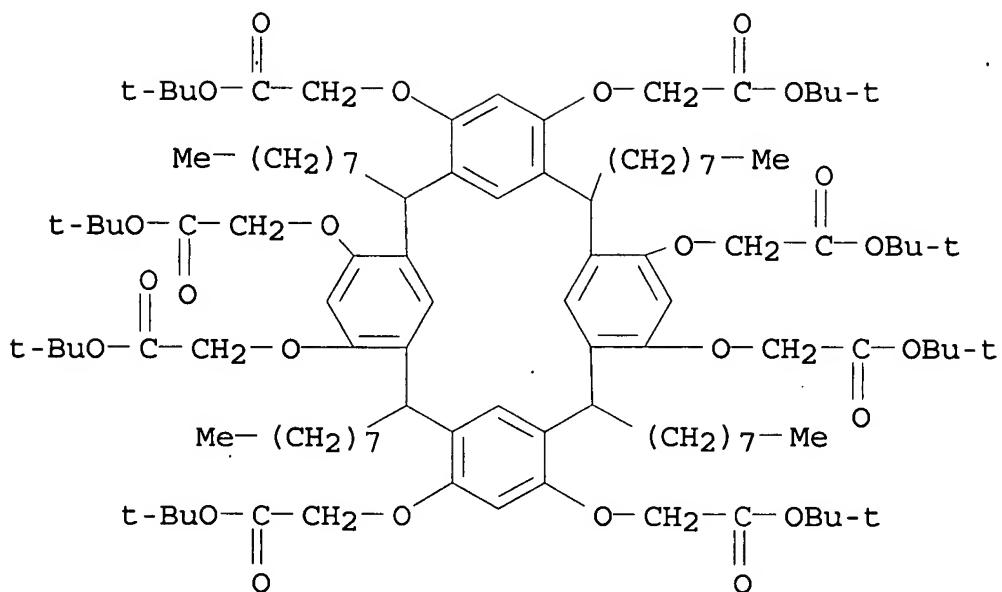
AB The compds. I ($R^1 = C_1\text{-}18$ alkyl, P ; $R^2 = H, C_1\text{-}15$ alkoxy; $m, p = 0\text{-}2$; $n = 4\text{-}12$) and **resists** contg: I and radiation-sensitive acid generators are sep. claimed. The **resists** produce high-resoln. patterns for fabrication of integrated circuits.

IT 623159-05-7P 623159-06-8P 623159-07-9P
 623159-08-0P 623159-10-4P 623159-12-6P
 623159-13-7P 623159-14-8P 623159-15-9P

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive **resists**
)

RN 623159-05-7 HCA

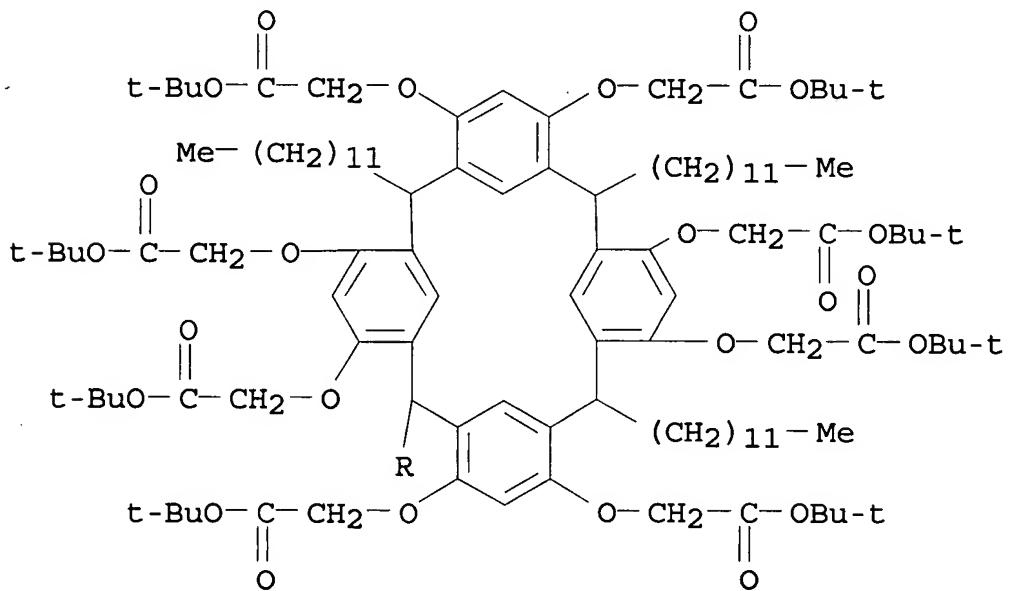
CN Acetic acid, 2,2',2'',2''',2'''',2''''',2''''''',2'''''''-[(2,8,14,20-tetraoctylpentacyclo[19.3.1.13,7.19,13.115,19]octacosan-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl)octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



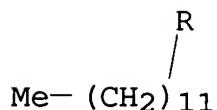
RN 623159-06-8 HCA

CN Acetic acid, 2,2',2'',2''',2''',2''',2''',2''',2'''''-[(2,8,14,20-tetradodecylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl)octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



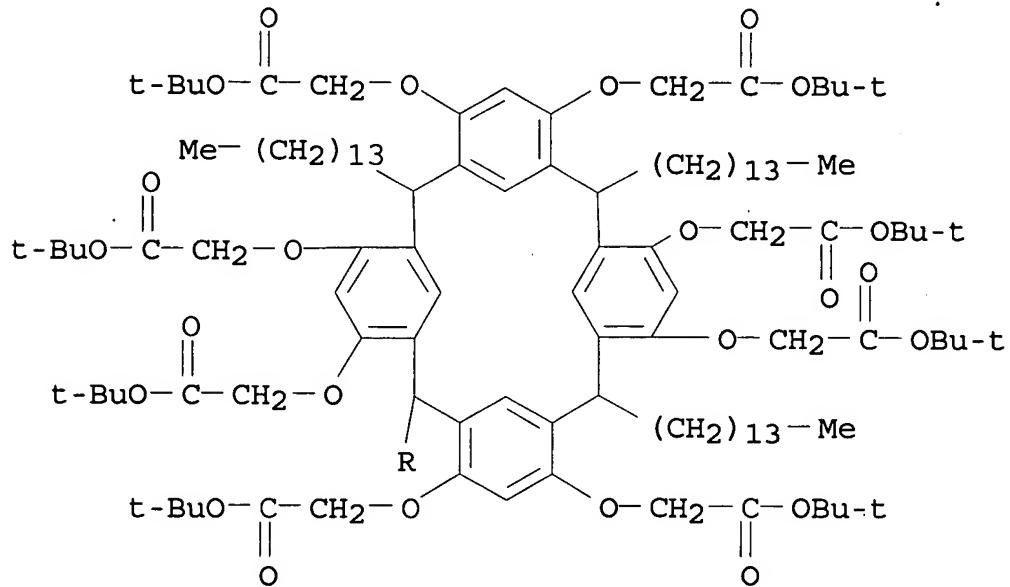
PAGE 2-A



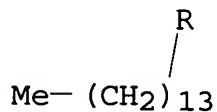
RN 623159-07-9 HCA

CN Acetic acid, 2,2',2'',2''',2'''',2''''',2'''''''-[(2,8,14,20-tetratetradecylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl)octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

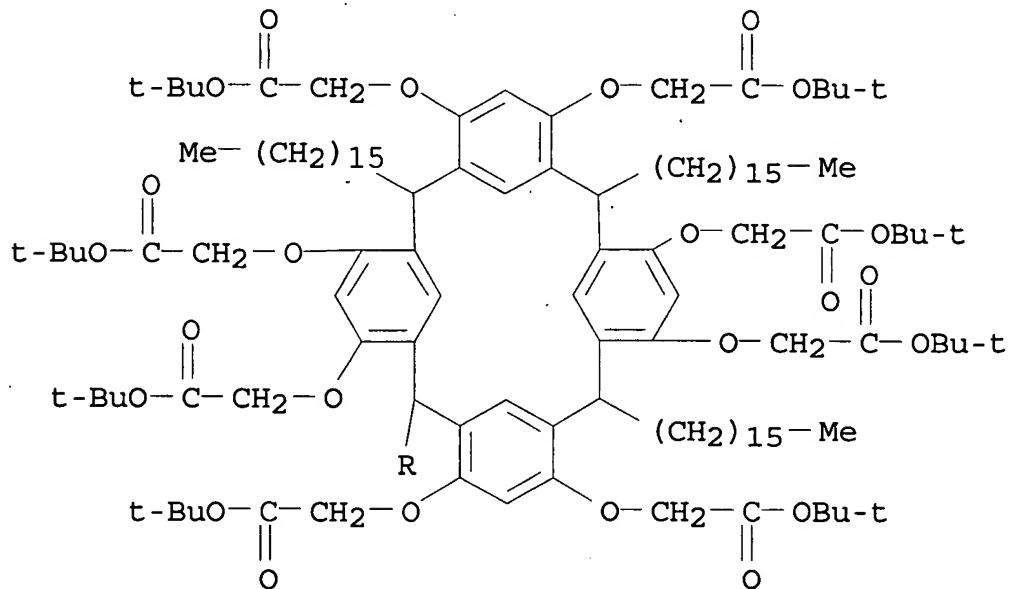


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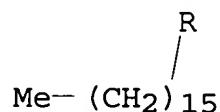
CN Acetic acid, 2,2',2'',2''',2'''',2''''',2'''''''-[(2,8,14,20-

tetrahexadecylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl)octakis(oxy)octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

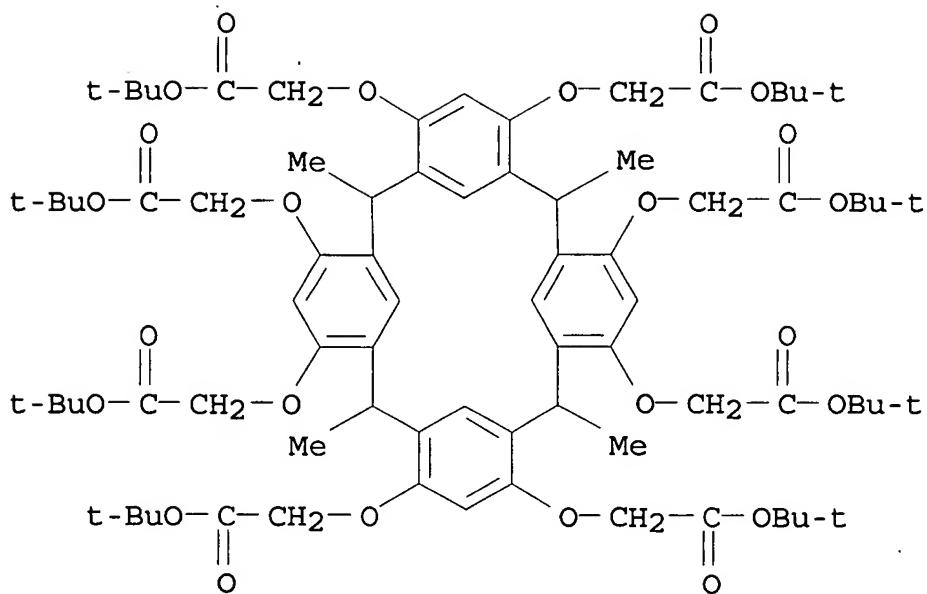
PAGE 1-A



PAGE 2-A



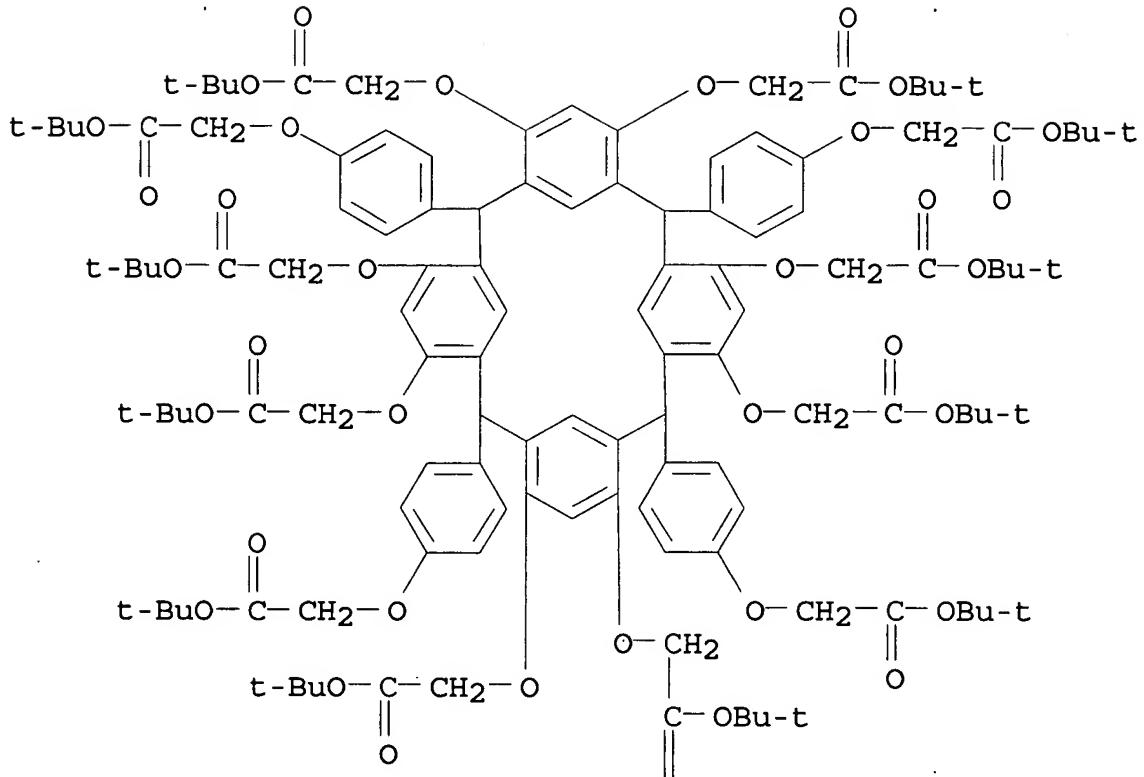
RN 623159-10-4 HCA
 CN Acetic acid, 2,2',2'',2''',2'''',2''''',2'''''''',2'''''''-[(2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl)octakis(oxy)octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 623159-12-6 HCA

CN Acetic acid, 2,2',2'',2''',2''',2''',2''',2'''''-[[2,8,14,20-tetrakis[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6;10,12,16,18,22,24-octayl]octakis(oxy)octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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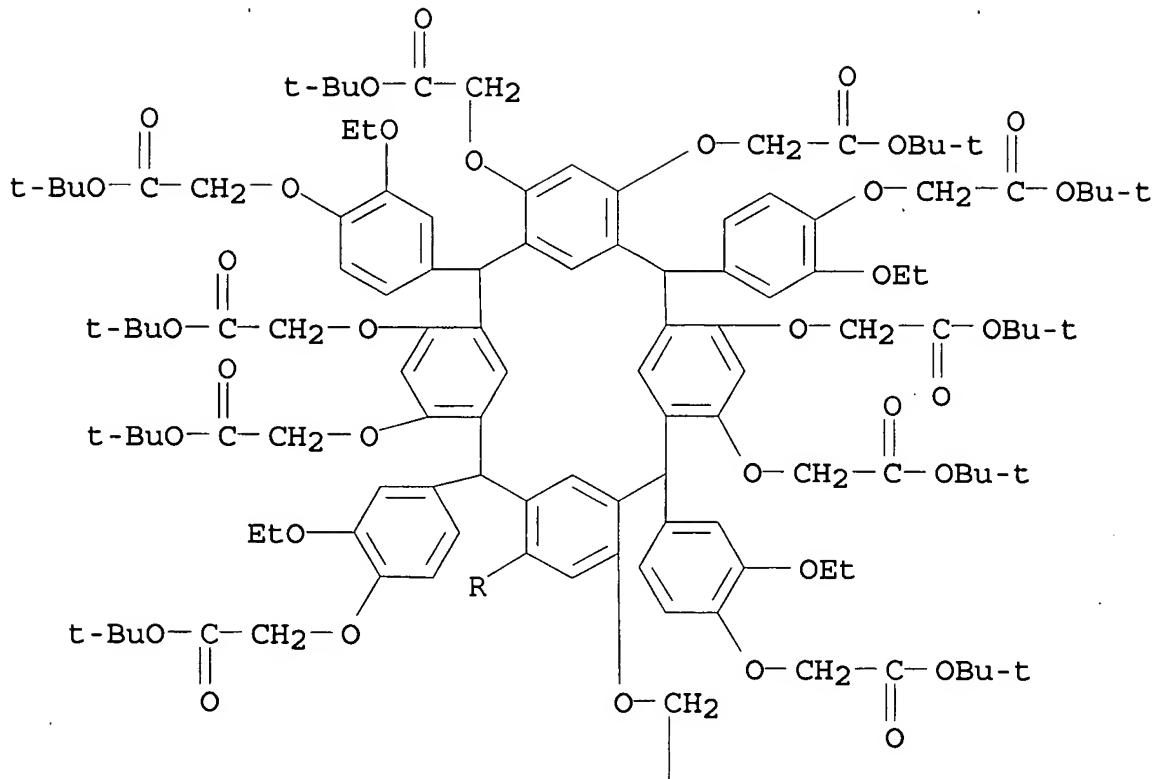


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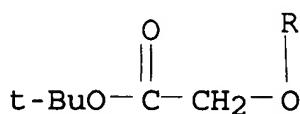
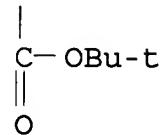


RN 623159-13-7 HCA
CN Acetic acid, 2,2',2'',2''',2'''',2''''',2'''''',2'''''''-[[2,8,14,20-tetrakis[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-3-ethoxyphenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

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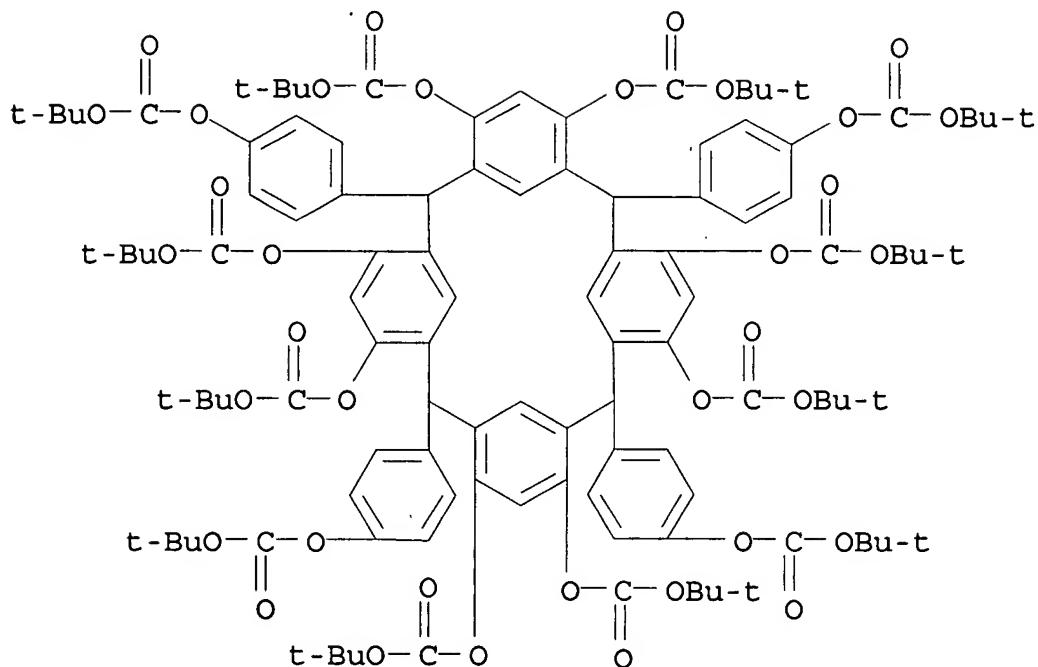
PAGE 2-A



RN 623159-14-8 HCA

CN Carbonic acid, 2,8,14,20-tetrakis[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octyl octakis(1,1-dimethylethyl) ester (9CI)

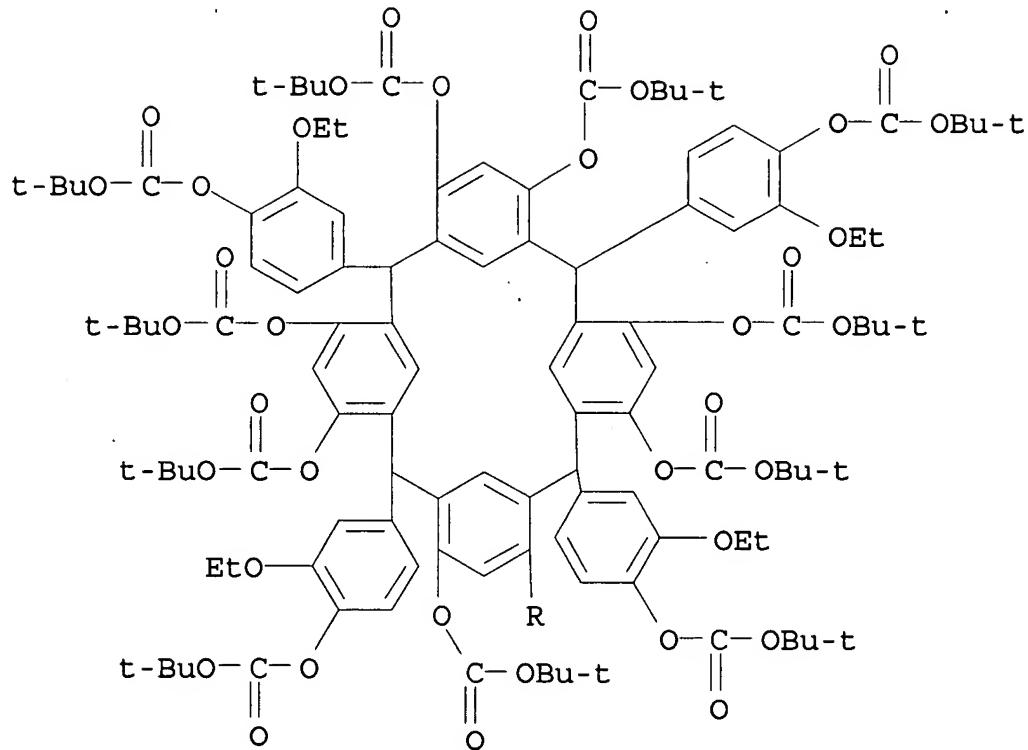
(CA INDEX NAME)



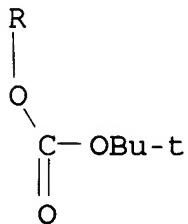
RN 623159-15-9 HCA

CN Carbonic acid, 2,8,14,20-tetrakis[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]-3-ethoxyphenyl]pentacyclo[19.3.1.13,7.1.9,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)ester (9CI) (CA INDEX NAME)

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IC ICM C07C069-712
 ICS C08G061-02; G03F007-039; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25
 ST butoxycarbonylalkoxy calixresorcinarene chem amplified pos
 photoresist; radiation sensitive resist
 butoxycarbonylalkoxy calixresorcinarene solvent solv
 IT Metacyclophanes

(calixarenes; tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive resists)

IT **Resists**

(radiation-sensitive; tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive resists)

IT **Positive photoresists**

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive resists)

IT 74227-35-3

(acid generators; tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive resists)

IT 65338-98-9P 176897-13-5P 182370-80-5P 203714-14-1P

623159-00-2P 623159-02-4P 623159-03-5P

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive resists)

IT 623159-05-7P 623159-06-8P 623159-07-9P

623159-08-0P 623159-10-4P 623159-12-6P

623159-13-7P 623159-14-8P 623159-15-9P

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive resists)

IT 108-46-3, Resorcinol, reactions 112-44-7, Undecanal 121-32-4,

Ethylvanillin 123-08-0, p-Hydroxybenzaldehyde 123-63-7

629-76-5, Pentadecanol 629-90-3, Heptadecanal 1454-85-9,

1-Heptadecanol 2765-11-9, Pentadecanal 5292-43-3, Tert-Butyl bromoacetate 10486-19-8, Tridecanal 24424-99-5, Di-tert-butyl dicarbonate

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent solv. for liable pos.-working radiation-sensitive resists)

L70 ANSWER 3 OF 65 HCA COPYRIGHT 2007 ACS on STN

139:343473 Positive-working photosensitive composition containing polyamide and semiconductor device. Makabe, Hiroaki; Banba, Toshio; Hirano, Takashi (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003302761 A ~~20031024~~, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-105699 ~~20020408~~.

AB The pos.-working photosensitive compn. comprises (A) a polyamide resin, (B) a photoacid, (C) a compd. protected by an acid unstable group, (D) a compd. capable of generating an acid in the presence of an acid, and (E) a solvent. Further, the compn. comprises a phenol compd. The compn. is applied on a semiconductor element so as to form a film with a thickness 0.1-30 μm upon thermal

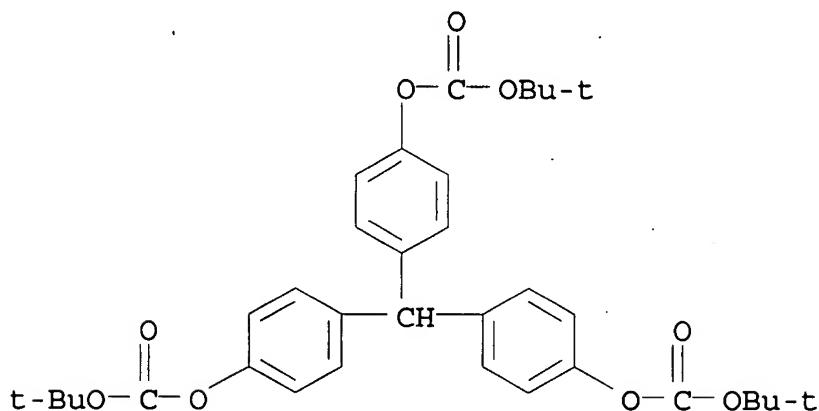
cyclodehydration.

IT 153041-55-5

(Pos.-working photosensitive compn. and semiconductor device)

RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

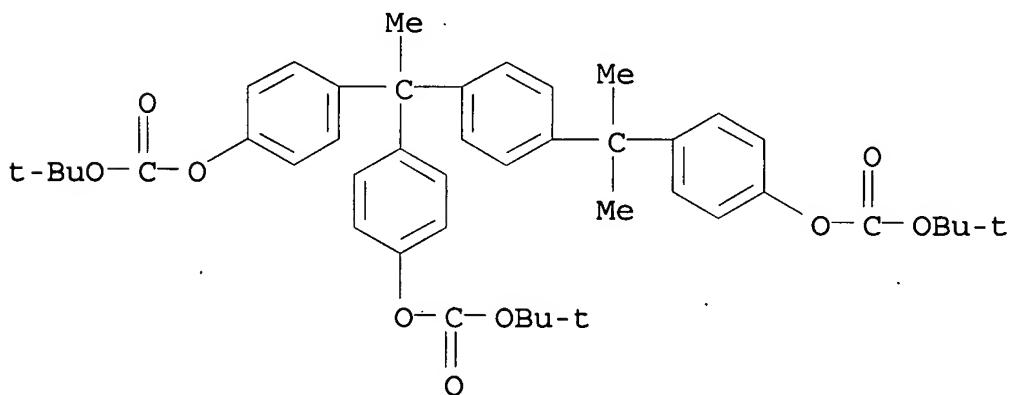


IT 151533-21-0

(pos.-working image-forming material having sp. peel strength)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[[(1,1-dimethylethoxy)carbonyloxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS C08F299-02; G03F007-004; G03F007-037; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

IT Photoimaging materials

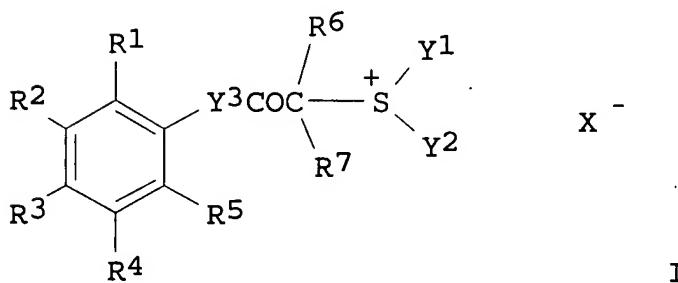
Photoresists
Semiconductor devices

- IT 153041-55-5
 (pos.-working image-forming material having sp. peel strength)
 IT 7583-20-2 151533-21-0 591756-33-1
 (Pos.-working photosensitive compn. and semiconductor device)
 (pos.-working image-forming material having sp. peel strength)

L70 ANSWER 4 OF 65 HCA COPYRIGHT 2007 ACS on STN

138:145067 Positive radiation-sensitive compositions having high sensitivity and high resolution. Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003035948 A 20030207, 51 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-141737 20020516. PRIORITY: JP 2001-148006 20010517.

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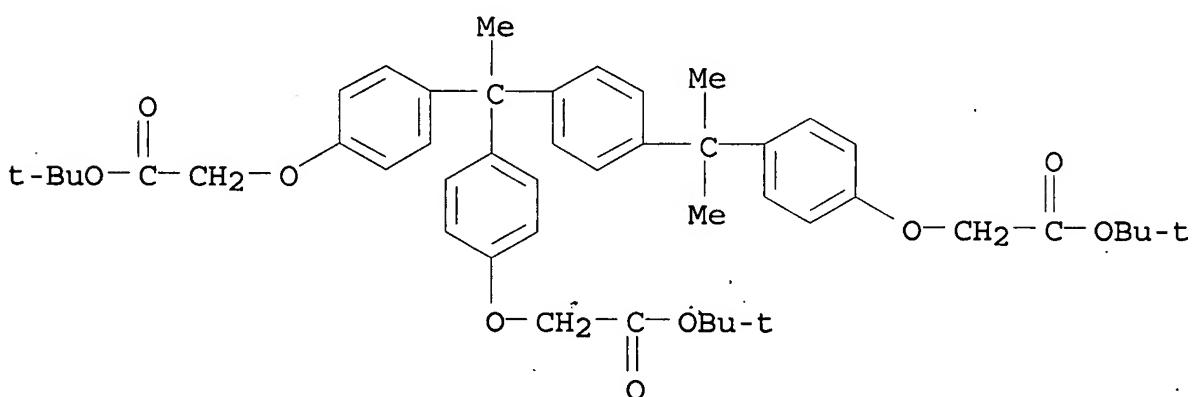
AB The compns. contain (A) ≥ 1 compds. generating acids by actinic ray (DUV, electron beam, x-ray, ionic ray) irradn. and represented by general formula I ($R_1-R_5 = H$, alkyl, alkoxy, NO_2 , halo, alkoxy carbonyl, aryl; ≥ 2 of R_1-R_5 may be bonded to each other and form ring structure; $R_6, R_7 = H$, alkyl, CN, aryl; $Y_1, Y_2 =$ alkyl, aryl, aralkyl, hetero atom.-contg. arom. group; Y_1 and Y_2 may be bonded to each other and form ring; $Y_3 =$ single bond or divalent linking group; $X^- =$ non-nucleophilic anion; ≥ 1 of R_1-R_5 and Y_1 and/or Y_2 are bonded to each other and form ring or ≥ 1 of R_1-R_5 and R_6 and/or R_7 are bonded to each other and form ring; the compd. may bear ≥ 2 of the structure I by bonding via a linking group at desired positions selected from R_1-R_7 or Y_1 or Y_2) and (B) resins bearing groups which can be decompd. by acids and increase solv. in alkali developers. In another alternative, the compns. contain A, (C) low mol.-wt. dissoln. inhibitors with mol. wt. ≤ 3000 and bearing groups which can be decompd. by acids and increase solv. in alkali developers, and (D) resins which are insol. in water and sol. in alkali developers. The compns. are useful for fabrication of lithog. plates, IC, circuit boards for liq. crystals and thermal heads, etc.

IT 153698-54-5

(dissoln. inhibitor; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'--[[1-[4-[1-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST pos DUV resist photoacid generator; thioanisole chloroacetic acid chloride reaction photoacid generator; deep UV resist pos photoacid generator; radiation sensitive resist pos photoacid generator; cyclic ketone silyl enol ether sulfoxide reaction; electron beam resist pos photoacid generator; chem amplified resist pos photoacid generator; tetralon enol silyl ether sulfoxide reaction

IT Positive photoresists

(UV; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

IT Positive photoresists

(chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

IT Electron beam resists

(pos.-working; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

IT 153698-54-5 153698-63-6 153698-65-8 359434-70-1

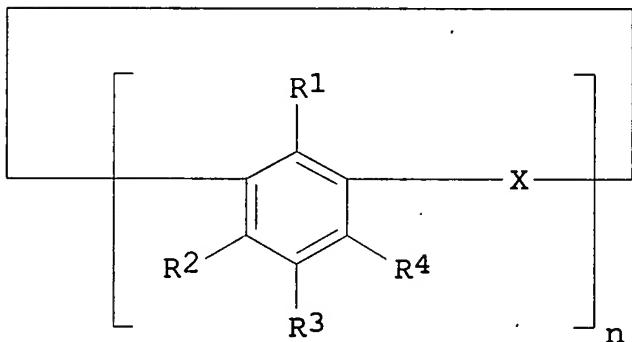
359434-73-4

(dissoln. inhibitor; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

L70 ANSWER 5 OF 65 HCA COPYRIGHT 2007 ACS on STN

137:377437 Positive working radiation polymerizable compositions. Ueda, Mitsuru; Shibasaki, Yuji; Fujigaya, Takehiko; Kwon, Yong Gil (Jsr Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002328473 A 20021115, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-134962 20010502.

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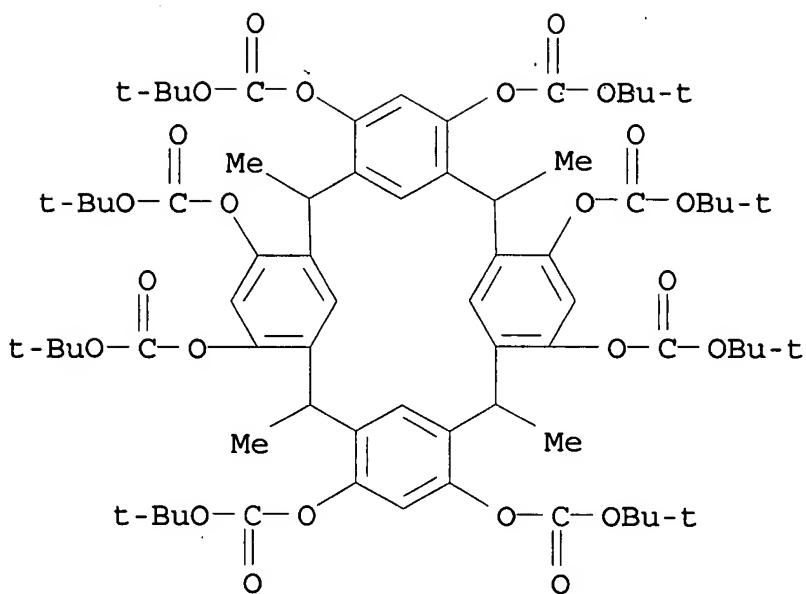
AB The compns. comprise (A) cyclic polyphenolic compds. I ($\text{R}^{1-4} = \text{H}$, OH, halo, alkyl, aryl, aralkyl, alkoxy, alkenyl, acyl, alkoxy carbonyl, alkyloxy, aryloxy, cyano, nitro; ≥ 1 of R^{1-4} is tert-butoxycarbonyloxy; X = direct bond, CR₅R₆; R₅₋₆ = H, alkyl, aryl; n = integer of 3-8) and (B) radiation-sensitive acid generators. The compns. have high resoln. and high sensitivity.

IT 250715-31-2P

(calixarene-acid generator compns. for pos.-working photoresists)

RN 250715-31-2 HCA

CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



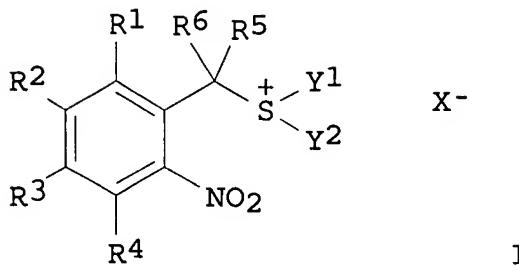
- IC ICM G03F007-039
 ICS G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38
 ST methylcalixresorcinarene acid generator pos **photoresist**;
 calixarene acid generator compn pos **photoresist**
 IT Positive **photoresists**
 (calixarene-acid generator compns. for pos.-working
photoresists)
 IT 65338-98-9DP, tert-butoxycarbonyl derivs. 65338-98-9P
 (calixarene-acid generator compns. for pos.-working
photoresists)
 IT 250715-31-2P
 (calixarene-acid generator compns. for pos.-working
photoresists)
 IT 75-07-0, Acetaldehyde, reactions 108-46-3, Resorcinol, reactions
 24424-99-5, Di-tert-butyl dicarbonate
 (calixarene-acid generator compns. for pos.-working
photoresists)
 IT 137308-86-2, Diphenyliodonium 9,10-dimethoxyanthracene-2-sulfonate
 (radiation-sensitive acid generator; calixarene-acid generator
 compns. for pos.-working **photoresists**)

L70 ANSWER 6 OF 65 HCA COPYRIGHT 2007 ACS on STN

137:255340 Positive-working chemically amplification type
 radiation-sensitive **resist** composition with specified acid
 generator. Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan).

Jpn. Kokai Tokkyo Koho JP 2002268209 A 20020918, 49 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-69053 20010312.

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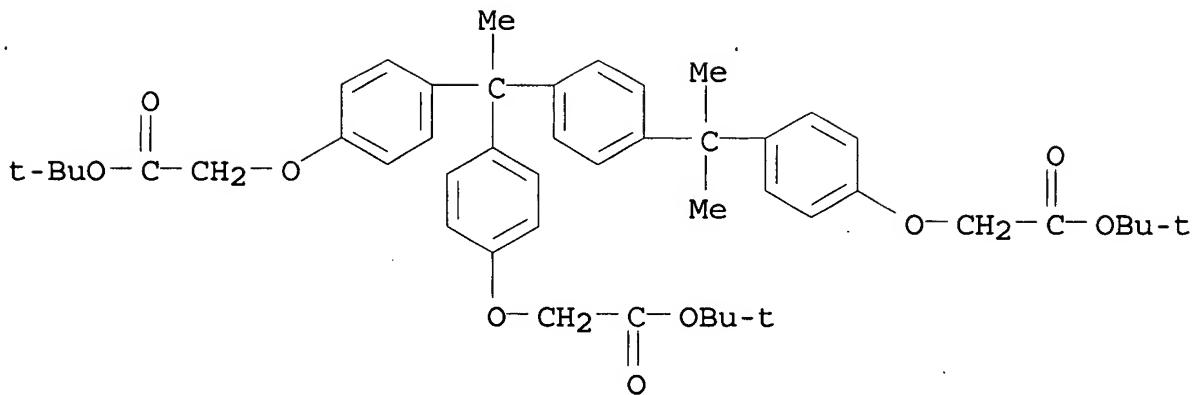
AB The invention relates to a pos.-working chem. amplification type radiation-sensitive **resist** compn. which comprises (A) a radiation-induced acid generator represented by I [R1-4 = H, alkyl, halogenated alkyl, alkoxy, nitro, alkoxy carbonyl, aryl, cyano; R5, R6 = H, alkyl, cyano, aryl; Y1, Y2 = alkyl, aryl, aralkyl; X- = non-nucleophilic anion], (B) an acid-decomposable, alk. developable resin, (C) an acid-decomposable, alk. developable resin with a mol. wt. of ≤ 3000 , (D) a water-insol., alk.-sol. resin, (E) an org. base compd., and (F) fluoro- and/or silicone-surfactants. The **resist** compn. shows higher resoln. and higher sensitivity to deep-UV and electron beams.

IT 153698-54-5

(in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)

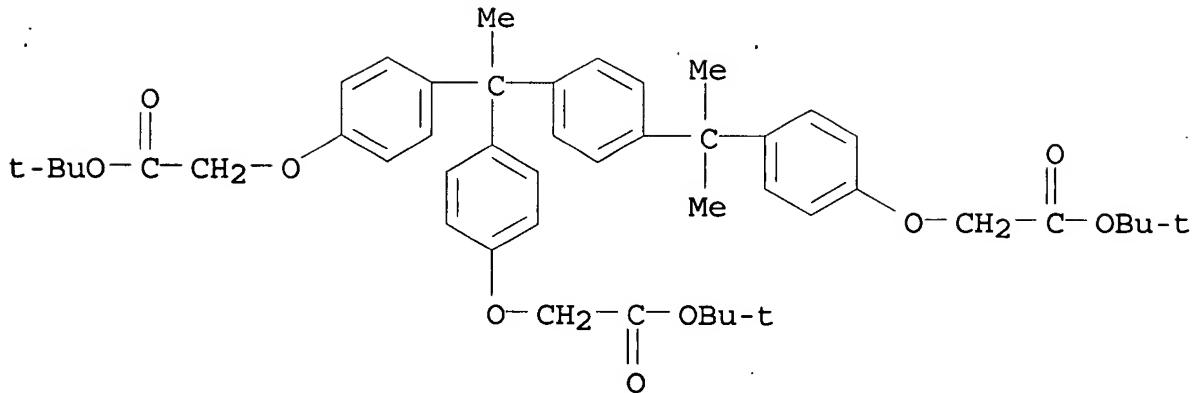
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004
 ICS G03F007-004; C08K005-00; C08K005-42; C08L101-02; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 76
- ST pos working chem amplification **photoresist** compn photoacid generator; electron beam **resist** compn pos working chem amplification
- IT Positive **photoresists**
 (chem. amplification; pos.-working chem. amplification type radiation-sensitive **resist** compn. with specified acid generator)
- IT Electron beam **resists**
 (pos.-working, chem. amplification; pos.-working chem. amplification type radiation-sensitive **resist** compn. with specified acid generator)
- IT Polysiloxanes, uses
 (surfactant in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)
- IT 102-82-9, Tri-n-butylamine 484-47-9, 2,4,5-Triphenylimidazole 2052-49-5, Tetrabutylammoniumhydroxide 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 3040-44-6, 1-Piperidineethanol (base compd. in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)
- IT 19600-49-8 24979-69-9, Poly(m-Hydroxystyrene) 24979-70-2, p-Hydroxystyrene homopolymer 24979-74-6, p-Hydroxystyrene-styrene copolymer 125325-82-8 129674-22-2 **153698-54-5**
 153698-63-6 153698-65-8 158593-28-3 159296-87-4 200808-68-0
 288620-13-3 288620-15-5 289706-85-0 325143-37-1 359434-70-1
 359434-73-4 359434-80-3 372968-15-5
 (in pos.-working chem. amplification type radiation-sensitive

- resist compn. showing higher sensitivity and higher resln. to deep-UV and electron beam)
- IT 66003-78-9 138529-81-4 138529-84-7 144089-15-6 153698-46-5
 258341-98-9 312386-77-9 376357-89-0 389859-76-1 461054-82-0
 (photoacid generator in pos.-working chem. amplification type radiation-sensitive resist compn. showing higher sensitivity and higher resln. to deep-UV and electron beam)
- IT 130975-60-9 461054-57-9 461054-59-1 461054-60-4 461054-61-5
 461054-62-6 461054-63-7 461054-64-8 461054-65-9 461054-66-0
 461054-68-2 461054-70-6 461054-71-7 461054-73-9 461054-75-1
 461054-77-3 461054-78-4 461054-80-8
 (radiation-sensitive acid generator in pos.-working chem. amplification type radiation-sensitive resist compn. showing higher sensitivity and higher resln. to deep-UV and electron beam)
- IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08
 364039-09-8, Troysol S 336
 (surfactant in pos.-working chem. amplification type radiation-sensitive resist compn. showing higher sensitivity and higher resln. to deep-UV and electron beam)
- L70 ANSWER 7 OF 65 HCA COPYRIGHT 2007 ACS on STN
 137:177102 Positive-working resist composition for electron-beam and x-ray lithography used for semiconductor device fabrication. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokyo Koho JP 2002229193 A 20020814, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-29752 20010206.
- AB The pos.-working resist compn. comprises (a) a compd. having a disulfone group, (b) a low mol. wt. dissoln. inhibitor with a mol. wt. \leq 3,000 which increases its solv. upon decompn. by an acid, and (c) an alk. sol. resin. The compd. having the disulfone group is represented by R₁-SO₂-SO₂-R₂ (R_{1,2} = maryl, alkyl, cycloalkyl, aralkyl). The pos.-working resist compn. exhibited high sensitivity and excellent pattern resln. even under high acceleration voltage conditions.
- IT 153698-54-5
 (dissoln. inhibitor; pos.-working resist compn. for electron-beam and x-ray lithog.)
- RN 153698-54-5 HCA
- CN Acetic acid, 2,2'-[[1-[4-[1-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004
 ICS G03F007-004; C08F012-14; C08K005-00; C08K005-41; C08L101-00;
 H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 38, 76
- ST resist compn electron beam x ray lithog; photoacid alk sol
 resin dissoln inhibitor resist compn
- IT Electron beam lithography
 X-ray lithography
 (pos.-working resist compn. for electron-beam and x-ray
 lithog.)
- IT 105649-65-8P, 3-t-Butoxystyrene homopolymer 155168-25-5P
 406685-56-1P 406685-57-2P 425422-24-8P, 4-t-Butoxystyrene-3,4-dimethoxystyrene copolymer
 (alk. sol. resin; pos.-working resist compn. for
 electron-beam and x-ray lithog.)
- IT 24979-70-2, VP-8000
 (alk. sol. resin; pos.-working resist compn. for
 electron-beam and x-ray lithog.)
- IT 153698-63-6P 153698-65-8P
 (dissoln. inhibitor; pos.-working resist compn. for
 electron-beam and x-ray lithog.)
- IT 153698-54-5 153698-58-9 162744-66-3 438491-43-1
 (dissoln. inhibitor; pos.-working resist compn. for
 electron-beam and x-ray lithog.)
- IT 10409-07-1 22040-25-1 91222-48-9 91222-53-6 153698-66-9
 194712-93-1 426832-92-0 446301-57-1
 (photoacid; pos.-working resist compn. for
 electron-beam and x-ray lithog.)
- IT 76937-83-2, α,α,α',α',α'',α'''-
 Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 148452-55-5,
 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane

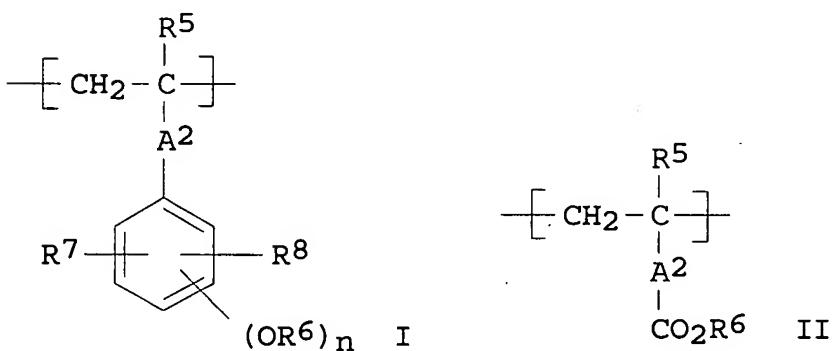
(pos.-working resist compn. for electron-beam and x-ray lithog.)

- IT 24979-69-9, Poly3-Hydroxystyrene 128761-29-5 149614-53-9,
3-Hydroxystyrene-4-hydroxystyrene copolymer 173786-70-4
321164-59-4 345212-27-3 345212-60-4 420131-94-8 446301-59-3
(resin; pos.-working resist compn. for electron-beam
and x-ray lithoq.)

L70 ANSWER 8 OF 65 HCA COPYRIGHT 2007 ACS on STN

137:54627 Electron-beam or x-ray positive-working resists showing high sensitivity and resolution, and enhanced pattern profiles. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002182392 A 20020626, 56 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-376059 20001211.

GI



AB The pos. . resist compns. contain (A) resins having repeating units I and/or II [R5 = H, halogen, CN, (substituted) alkyl, haloalkyl; OR6, CO2R6 = acid-decomp., alkali-sol. group; R7, R8 = H, OH, halogen, CN, (substituted) alkoxy, acyl, alkyl, cycloalkyl, alkenyl, aralkyl, aryl; A2 = single bond, (substituted) divalent alkynylene, alkenylene, cycloalkylene, arylene, OCOR9, COOR10, CONR11R12; R9, R10, R12 = single bond, divalent alkylene, alkenylene, cycloalkylene, or arylene which may have ether, ester, amide, urethane, ureido and may be substituted; R11 = H, (substituted) alkyl, cycloalkyl, aralkyl, aryl; n = 1-3 integer; R6, R6 and R7 or R8, or R7 and R8 may be bonded together] and (B) disulfonic acid group-contg. compds.

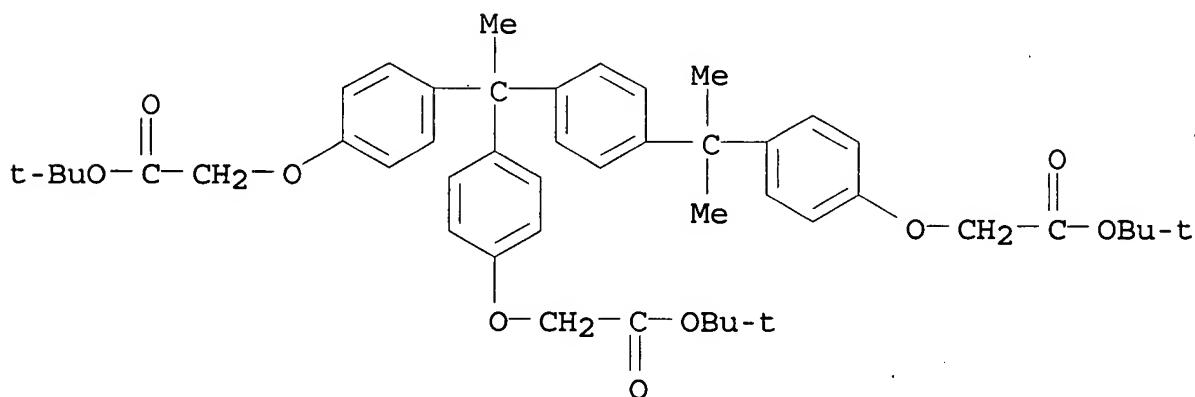
IT 153698-54-5

(dissoln. inhibitor; electron-beam or x-ray pos.-working
resists showing high sensitivity and resoln., and
enhanced pattern profiles)

RN 153698-54-5 HCA

CN Acetic acid, 2,2' - [[1 - [4 - [1 - [4 - [2 - (1,1-dimethylethoxy) - 2 -

oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



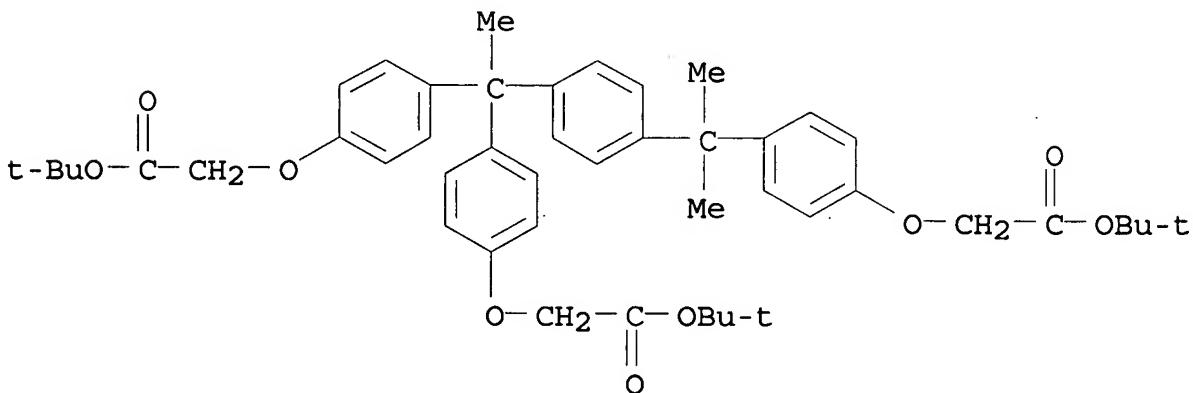
- IC ICM G03F007-039
ICS C07C381-00; C08K005-41; C08L101-12; G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST electron beam pos **resist** styrene polymer; x ray pos **resist** styrene polymer; disulfonic acid photoacid generator pos **resist**
- IT Electron beam **resists**
X-ray **resists**
(pos.-working; electron-beam or x-ray pos.-working **resists** showing high sensitivity and resoln., and enhanced pattern profiles)
- IT 153698-54-5 153698-63-6
(dissoln. inhibitor; electron-beam or x-ray pos.-working **resists** showing high sensitivity and resoln., and enhanced pattern profiles)
- IT 109-92-2DP, Ethyl vinyl ether, reaction products with poly(p-hydroxystyrene) 24979-70-2DP, Poly(p-hydroxystyrene), reaction products with Et vinyl ether 158593-28-3P 200808-68-OP 438535-75-2DP, hydrolyzed 438535-77-4P 438535-78-5P 438535-80-9P 438535-82-1P 438535-83-2P 438535-84-3P 438535-85-4P 438535-86-5P 438535-87-6P 438535-88-7P
(electron-beam or x-ray pos.-working **resists** showing high sensitivity and resoln., and enhanced pattern profiles)
- IT 1886-74-4 10409-07-1 13603-79-7 58113-98-7 91222-48-9 91222-53-6 124737-97-9 124738-06-3 194712-93-1 426832-92-0
(photoacid generator; electron-beam or x-ray pos.-working **resists** showing high sensitivity and resoln., and enhanced pattern profiles)

L70 ANSWER 9 OF 65 HCA COPYRIGHT 2007 ACS on STN
 137:54610 Positive **resist** composition sensitive to electron beam or X-ray. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002174894 A 20020621, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-372986 20001207.

AB The **resist** compn. contains (A) polymers having a repeating unit -CH₂CR₁(A₁SO₂SO₂R₂) - [R₁ = H, halo, cyano, (substituted) alkyl or haloalkyl; R₂ = (substituted) alkyl, cycloalkyl, aryl, or aralkyl; A₁ = none, (substituted) alkylene, alkenylene, cycloalkylene, arylene, -OCOX₁-, -COOX₂-, -CONX₃X₄-; X₁₋₂, X₄ = (substituted) alkylene, alkenylene, cycloalkylene, arylene; X₁₋₂ and/or X₄ may contain CO, COO, amido, urethane, or ureido structure; X₃ = H, (substituted) alkyl, cycloalkyl, aralkyl, aryl] and (B) acid-decomposable dissoln.-inhibiting compd. with mol. wt. ≤3000. The **resist** compn. has high sensitivity and resoln., and shows good patterning profiles. The **resist** compn. is useful for microprocessing of semiconductor devices.

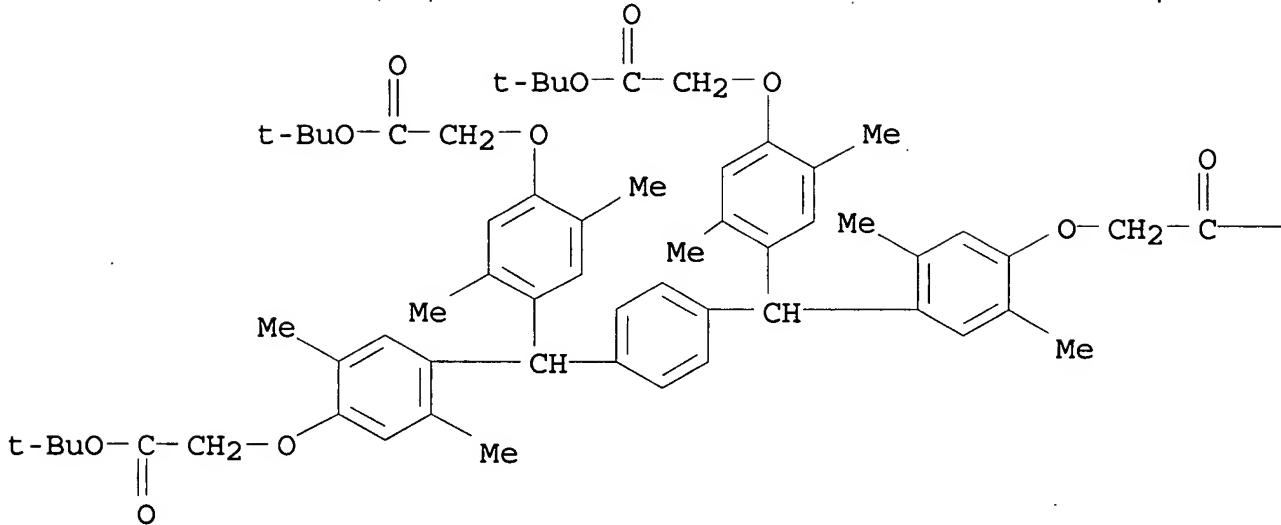
IT 153698-54-5 177983-92-5
 (dissoln.-inhibiting compd.; electron beam- or X-ray-sensitive pos. **resist** compn. with high resoln. and sensitivity)

RN 153698-54-5 HCA
 CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 177983-92-5 HCA
 CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis[(2,5-dimethyl-4,1-phenylene)oxy]]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

 OBu-t

IC ICM G03F007-004
 ICS G03F007-004; C08K005-00; C08L057-10; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38
 ST sensitivity resln pos resist electron beam X ray
 IT Positive photoresists
 (electron beam- or X-ray-sensitive pos. resist compn.
 with high resln. and sensitivity)
 IT Resists
 (pos.-working; electron beam- or X-ray-sensitive pos.
 resist compn. with high resln. and sensitivity)
 IT 153698-54-5 153698-58-9 153698-63-6 153698-65-8
 177983-92-5 438491-43-1
 (dissoln.-inhibiting compd.; electron beam- or X-ray-sensitive
 pos. resist compn. with high resln. and sensitivity)

IT 403656-00-8P 403656-01-9P 403656-03-1P 438491-35-1P
 438491-38-4P 438491-39-5P 438491-40-8P 438491-41-9P
 438491-42-0P

(electron beam- or X-ray-sensitive pos. resist compn.
 with high resoln. and sensitivity)

L70 ANSWER 10 OF 65 HCA COPYRIGHT 2007 ACS on STN

136:348304 Positive photosensitive composition. Kodama, Kunihiko; Aoai, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1199603 A1 20020424, 148 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO; MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2001-124329 20011019. PRIORITY: JP 2000-321128 20001020; JP 2000-352899 20001120; JP 2001-132546 20010427.

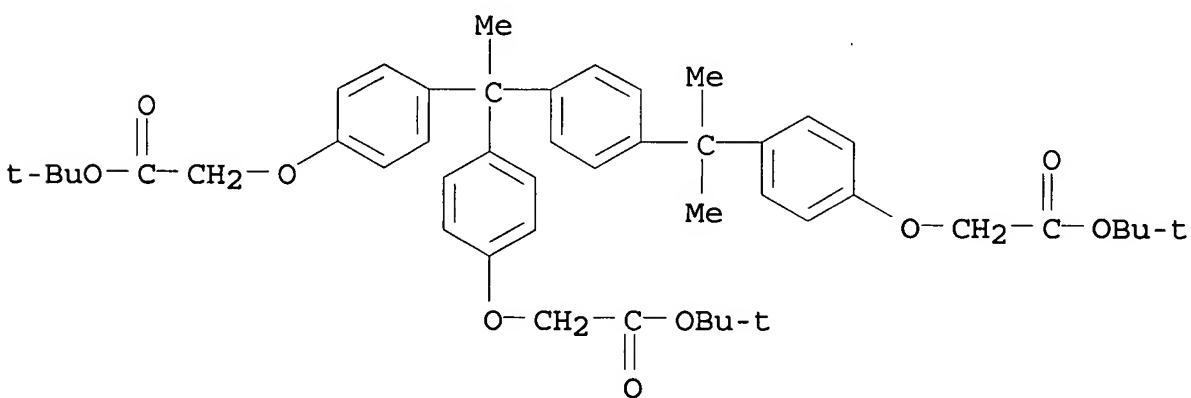
AB A pos. photosensitive compn. comprises a compd. capable of generating a specified sulfonic acid upon irradn. with one of an actinic ray and radiation and a resin capable of decomp. under the action of an acid to increase the solv. in an alkali developer.

IT 153698-54-5

(photo-acid generator used in pos. photoresist compn.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-039; C07C309-06; C07C381-12

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST pos photoresist photo acid generator photodecomposable resin; sulfonium salt iodonium salt

IT Onium compounds

- (iodonium; photo-acid generator used in pos. **photoresist** compn.)
- IT Sulfonium compounds
(photo-acid generator used in pos. **photoresist** compn.)
- IT Positive **photoresists**
(pos. **photoresist** compn. contg. novel photo-acid generators and photo-decomposable resins)
- IT 398141-17-8P 414911-27-6P
(photo-acid generator used in pos. **photoresist** compn.)
- IT 19600-49-8 24979-69-9, Poly(*m*-Hydroxystyrene) 24979-74-6,
p-Hydroxystyrene-styrene copolymer 66003-78-9 133710-62-0
138529-81-4 144317-44-2 **153698-54-5** 153698-63-6
153698-65-8 177034-80-9 195000-67-0 195154-83-7 197447-16-8
216308-45-1 241806-75-7 250378-10-0 258341-98-9 258872-05-8
258879-87-7 260448-02-0 288303-55-9 297156-40-2 301153-77-5
301664-71-1 304441-22-3 324770-96-9 357413-69-5 357413-71-9
359434-70-1 359434-73-4 376357-89-0 389859-76-1 398141-18-9
398141-19-0 414911-28-7 414911-29-8 414911-31-2 414911-32-3
414911-33-4 414911-34-5 414911-35-6 414911-36-7 414911-37-8
414911-39-0 414911-40-3 414911-42-5 414911-43-6 414911-45-8
414911-47-0 414911-48-1 414911-50-5 414911-51-6 414911-52-7
414911-54-9 414911-56-1 414911-58-3 414911-60-7 414911-63-0
414911-65-2 414911-67-4 414911-69-6 414911-71-0 414911-73-2
414911-75-4 414911-76-5 414911-77-6 414911-79-8 414911-81-2
414911-82-3 414911-83-4 414911-85-6 414911-86-7 414911-87-8
414911-88-9 415916-79-9 415916-81-3 415916-83-5 415916-84-6
415920-53-5 415920-54-6
(photo-acid generator used in pos. **photoresist** compn.)
- IT 200808-68-0P, Styrene-p-hydroxystyrene-tert-butyl acrylate copolymer
(photo-decomposable resin in pos. **photoresist** compn.)
- IT 177080-68-1
(photo-decomposable resin in pos. **photoresist** compn.)
- IT 24979-70-2DP, Poly(p-hydroxystyrene), ester or ether derivs.
159296-87-4DP, p-Vinylphenol-tert-butyl acrylate copolymer, reaction products with iso-Bu vinyl ether 159296-87-4P
(photo-decomposable resin used in pos. **photoresist** compn.)
- IT 108-24-7, Acetic anhydride 109-53-5, Isobutyl vinyl ether
4442-79-9, Cyclohexane ethanol 24424-99-5, Di-tert-butyl dicarbonate
(reagent used in prep. photo-decomposable resin used in pos. **photoresist** compn.)
- IT 24979-70-2, VP 8000
(starting material for prep. photo-decomposable resin used in pos. **photoresist** compn.)
- IT 3744-08-9 111329-06-7 113507-82-7
(starting material for synthesizing photo-acid generator used in pos. **photoresist** compn.)

L70 ANSWER 11 OF 65 HCA COPYRIGHT 2007 ACS on STN

136:270357 A positive-working alkaline developable **photoresist** based on partially tert-Boc-protected calix[4]resorcinarene and a photoacid generator. Young-Gil, Kwon; Kim, Jin Baek; Fujigaya, Tsuyohiko; Shibasaki, Yuji; Ueda, Mitsuru (Department of Chemistry, Korea Advanced Institute of Science & Technology, Yusong-ku, Taejon, 305-701, S. Korea). Journal of Materials Chemistry, 12(1), 53-57 (English) 2002. CODEN: JMACEP. ISSN: 0959-9428.

Publisher: Royal Society of Chemistry.

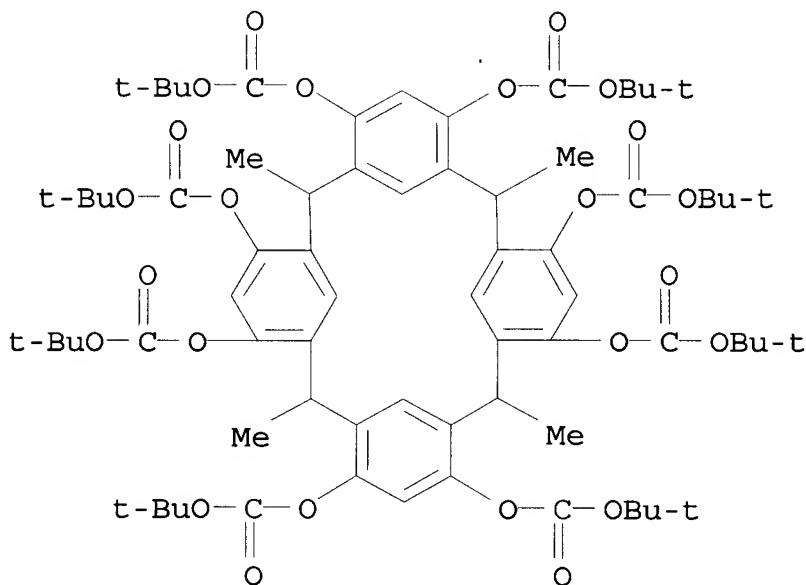
AB A pos. working low-mol.-wt. **photoresist** based on partially t-Boc protected tetra-C-methylcalix[4]resorcinarene (t-Boc C-4-R) and a photoacid generator (PAG), diphenyliodonium 9,10-dimethoxyanthracene-2-sulfonate (DIAS) was developed. t-Boc C-4-Rs were prep'd. by the reaction of C-4-R with di-CMe₃ dicarbonate in the presence of 4-dimethylaminopyridine (DMAP). A clear film cast from a 20% t-Boc C-4-R soln. in cyclohexanone showed high transparency to UV >300 nm. The appropriate t-Boc protecting ratio was .apprx.60 mol% in view of adhesion, deprotection temp. and dissoln. rate. The **photoresist** consisting of 60 mol% t-Boc C-4-R (95%) and DIAS (5%) showed a sensitivity of 13 mJ cm⁻² and a contrast of 12.6 when it was exposed to 365 nm light and post-baked at 105° for 90 s, followed by developing with a 2.38% aq. Me₄NOH (TMAH) soln. at room temp. A fine pos. image featuring 1.5 μm of min. line and space patterns was obsd. on the film of the **photoresist** exposed to 40 mJ cm⁻² of UV-light at 365 nm by the contact mode.

IT 250715-31-2P

(pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)

RN 250715-31-2 HCA

CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos working **photoresist** butoxycarbonyl protected calixarene photoacid generator
- IT Dissolution
- Positive **photoresists**
 (pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 75-07-0, Acetaldehyde, reactions 77-78-1 108-46-3,
 1,3-Benzenediol, reactions 1122-58-3 1483-72-3 16106-40-4
 34619-03-9 67580-39-6
 (pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 75-59-2P 65338-98-9P **250715-31-2P**
 (pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 999-97-3
 (silicon wafer coated with; pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 405263-63-0
 (silicon wafer coated with; pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)

L70 ANSWER 12 OF 65 HCA COPYRIGHT 2007 ACS on STN

135:84299 Positive-working **photoresist** compositions comprising alkaline-soluble silsesquioxanes. Mizutani, Kazuyoshi; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001174998 A 20010629, 45 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 1999-354710 19991214.

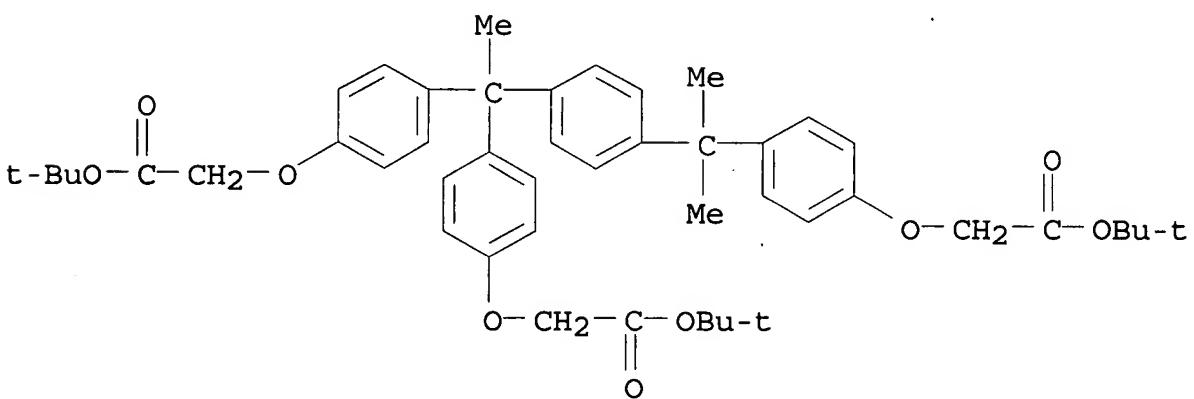
AB The compns. contain silsesquioxanes having structural repeating unit [Si(LXZ)O₃/2] (L = ANHCO, ANHCO₂, ANHCONH; A = single bond, alkylene, arylene; X = single bond, bivalent bond; Z = C₆H₅-l(OH)₁, CY₃-m[C₆H₅-l(OH)₁,]_m; Y = H, linear, branched, or cyclic alkyl, aryl, or aralkyl; l, m = integer of 1-3). Also claimed are pos. **photoresist** compns. contg. (a) the above stated silsesquioxanes, (b) photoacid generators, and (c1) phenolic compds. which their phenolic OH groups are completely protected with acid-decompg. groups or (c2) arom. or aliph. carboxylic acids which their carboxyl groups are completely protected with acid-decompg. groups. The compns. have high sensitivity and high resoln. and are esp. suitable for use as upper-layer **resists** in bilayered **resists** used for fabrication of semiconductor devices, liq. crystal displays, etc.

IT 153698-54-5

(pos.-working **photoresist** compns. comprising alk.-sol. amide group-contg. silsesquioxanes)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[{[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-075

ICS C08L083-08; G03F007-039; H01L021-027; H05K003-06

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

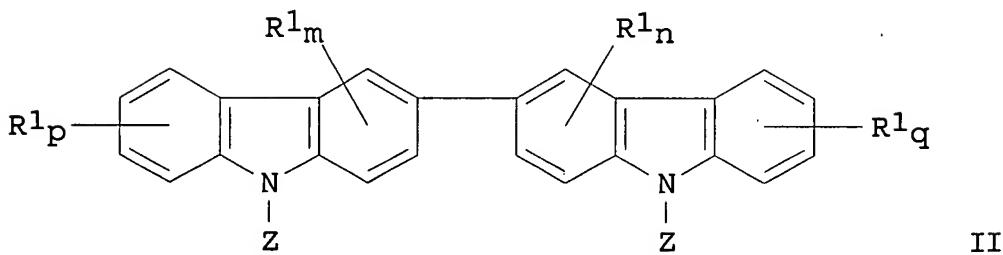
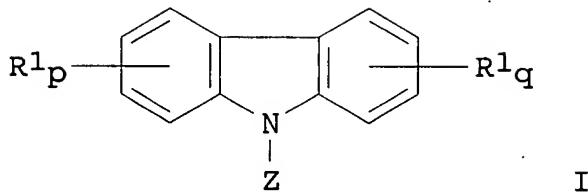
Section cross-reference(s): 38

ST silsesquioxane pos photoresist high resoln sensitivity;
amide contg silsesquioxane pos photoresist
IT Silsesquioxanes
(amide group-contg.; pos.-working photoresist compns.
comprising alk.-sol. amide group-contg. silsesquioxanes)
IT Positive photoresists
(pos.-working photoresist compns. comprising alk.-sol.
amide group-contg. silsesquioxanes)
IT 153698-46-5, Triphenylsulfonium pentafluorophenylsulfonate
197447-16-8, Triphenylsulfonium 2,4,6-triisopropylphenylsulfonate
335385-79-0 346702-86-1
(acid generator; pos.-working photoresist compns.
comprising alk.-sol. amide group-contg. silsesquioxanes)
IT 153698-54-5 153698-63-6 199432-82-1 346702-85-0
(pos.-working photoresist compns. comprising alk.-sol.
amide group-contg. silsesquioxanes)
IT 126-00-1DP, Diphenolic acid, reaction products with silsesquioxanes
156-38-7DP, 4-Hydroxyphenylacetic acid, reaction products with
aminopropyltrimethoxysilane-chloromethyltrimethoxysilane copolymer
54115-51-4DP, 3-Aminopropyltrimethoxysilane homopolymer, reaction
product with diphenolic acid 161376-90-5DP, reaction product with
diphenolic acid 346702-97-4DP, reaction product with diphenolic
acid and hydroxyphenylacetic acid
(pos.-working photoresist compns. comprising alk.-sol.
amide group-contg. silsesquioxanes)
IT 346702-87-2 346702-89-4 346702-91-8 346702-93-0 346702-95-2
(pos.-working photoresist compns. comprising alk.-sol.
amide group-contg. silsesquioxanes)

L70 ANSWER 13 OF 65 HCA COPYRIGHT 2007 ACS on STN

134:318666 Positive-working radiation sensitive resin composition.
Kobayashi, Eiichi; Miyamoto, Masahiro; Iwanaga, Shinichiro; Chen,
Yang Hung (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
2001109142 A 20010420, 21 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 1999-290249 19991012.

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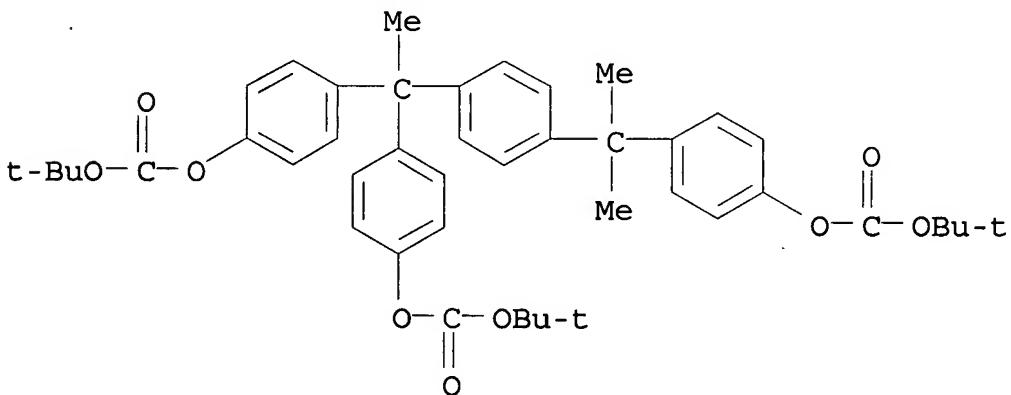
AB The pos.-working radiation sensitive resin compn. comprises (A) a radiation-sensitive acid-generating agent, (B) a carbazole as a sensitizing agent represented by I or II (R^1 = halo, OH, mercapto, etc.; $p, q = 0-4$; $m, n = 0-2$; $Z = C_{1-18}$ monovalent org. group), (C) (i) alk.-insol. or hardly sol. resin which is protected by an acid decompn. group and becomes alk. sol. upon dissocn. of the acid decompn. group or (ii) an alk. sol. resin and an alk. solv.-controlling agent, and (D) a crosslinking agent. A fine pattern is formed from this resin compn. by UV to far-UV region.

IT 151533-21-0

(pos.-working radiation sensitive resin compn.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-004; C08K005-00; C08K005-3417; C08K005-36; C08L101-00;
G03F007-039; H01L021-027
CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST carbazole sensitizer radiation sensitive resin compn
photoresist
IT Photoresists
(pos.-working radiation sensitive resin compn. for)
IT 86-28-2, N-Ethylcarbazole 20466-00-6, 9,9'-Diethyl-3,3'-
dicarbazole 24979-70-2, Poly(p-hydroxystyrene) 24979-70-2D,
Poly(p-hydroxystyrene), deriv. 24979-74-6, p-Hydroxystyrene-
styrene copolymer 57103-09-0, N-Ethyl-3,6-bis(benzoyl)carbazole
117458-06-7 121091-20-1, 1,4,5,8,9-Pentamethylcarbazole
151533-21-0 200808-68-0, tert-Butyl acrylate-p-
hydroxystyrene-styrene copolymer
(pos.-working radiation sensitive resin compn.)

L70 ANSWER 14 OF 65 HCA COPYRIGHT 2007 ACS on STN

134:214835 Dendrimer-based chemically amplified **resists** for
sub-100-nm lithography. Tully, David C.; Trimble, Alexander R.;
Frechet, Jean M. J. (Dep. Chem., Univ. of California, Berkeley, CA,
USA). Proceedings of SPIE-The International Society for Optical
Engineering, 3999(Pt. 2, Advances in Resist Technology and
Processing XVII), 1202-1206 (English) 2000. CODEN:
PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society
for Optical Engineering.

AB Several new poly(benzyl ether) and poly(benzyl ester) dendrimers
that incorporate acid- and thermally-labile peripheral groups have
been synthesized. tert-Bu ester terminated poly(benzyl ether)
dendrimers were synthesized using α -bromo-tert-Bu acetate in
the preliminary protection step to afford the first generation alc.
A std. bromination of the focal point benzylic alc. was used for the
activation step, while std. Williamson ether conditions were used
for the coupling steps to afford higher generation poly(benzyl
ether) dendrons. tert-Bu ester terminated dendrons were then
coupled to a difunctional core to produce the [G-3] dendrimer.
tert-Bu carbonate (t-Boc) terminated poly(benzyl ester) dendrimers
were also synthesized. This class of dendrimers was synthesized by
first protecting monomeric building block 3,5-dihydroxybenzaldehyde
with di-t-Bu dicarbonate. A reductive activation step afforded the
[G-1] alc. The growth steps were accomplished by either Mitsunobu
etherification with 3,5-dihydroxybenzaldehyde or by esterification
with 5-hydroxymethylisophthalic acid. Finally, coupling of the
benzyl alc. dendrons to a polyfunctional core afforded second and
third generation dendrimers. Chem. amplified **resists**

formulated from both t-Bu ester and t-Boc terminated dendrimers show high sensitivity to DUV and e-beam irradn. Feature sizes well below 100 nm have been routinely patterned using e-beam lithog.

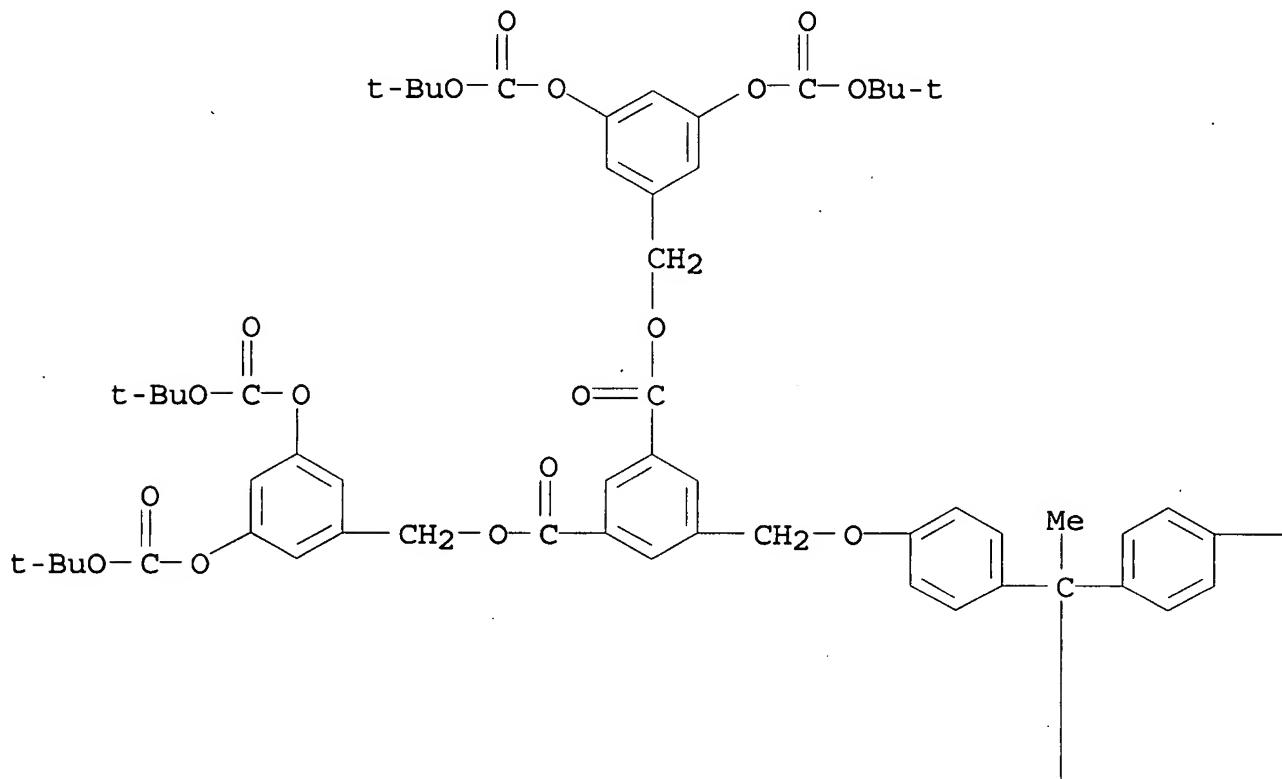
IT 267874-32-8P

(tert-Bu carbonate terminated dendrimer for chem. amplified resists for sub-100 nm photolithog.)

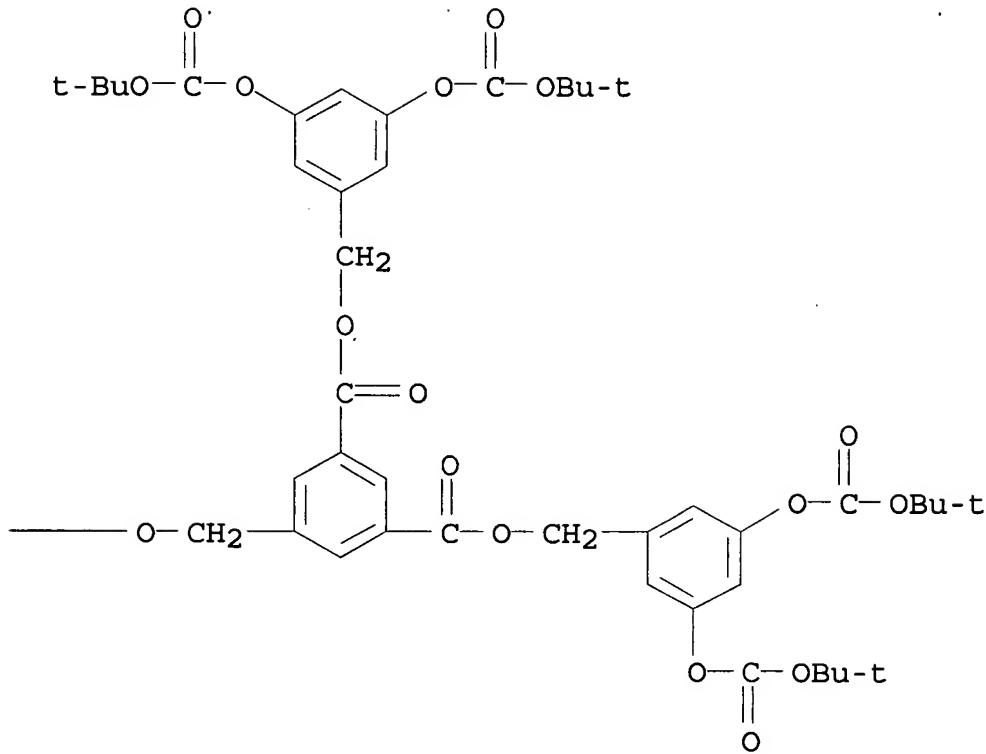
RN 267874-32-8 HCA

CN 1,3-Benzenedicarboxylic acid, 5,5',5'''-[ethylidynetris(4,1-phenyleneoxymethylene)]tris-, hexakis[[3,5-bis[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]methyl] ester (9CI) (CA INDEX NAME)

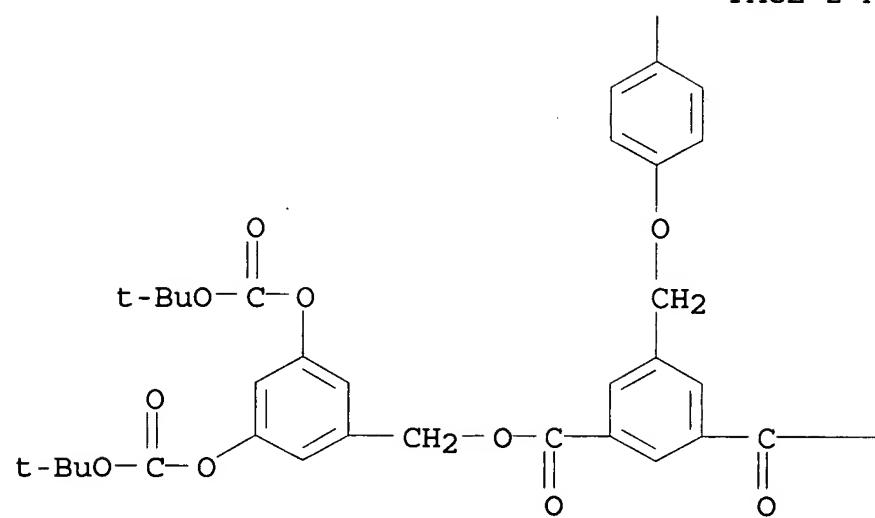
PAGE 1-A



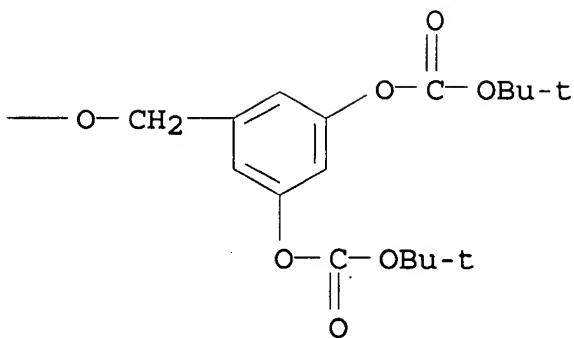
PAGE 1-B



PAGE 2-A



PAGE 2-B

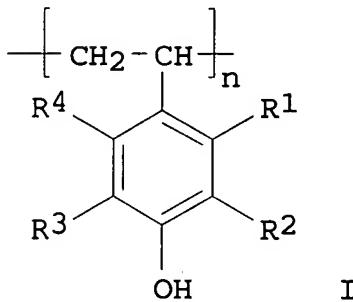


- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST dendrimer based chem amplified **photoresist** vacuum UV lithog
- IT Electron beam **resists**
Photoresists
 (chem. amplified; chem. amplified **resists** for sub-100 nm lithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT Polyesters, uses
 (dendrimers; chem. amplified **resists** for sub-100 nm lithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT Dendritic polymers
 (polyesters; chem. amplified **resists** for sub-100 nm lithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT 328396-58-3DP, tert-Bu hydroxyacetate ether-terminated
 (dendritic; tert-Bu ester terminated dendrimer for chem. amplified **resists** for sub-100 nm photolithog.)
- IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate 213740-80-8
 (photoacid generator; chem. amplified **resists** for sub-100 nm photolithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT 267874-30-6 267874-31-7 305323-42-6 305323-45-9
 (prep. of tert-Bu carbonate terminated dendrimer for

- resist application)
- IT 267874-29-3 328084-37-3 328084-38-4 328084-39-5 328084-40-8
 (prepn. of tert-Bu ester terminated dendrimer for photoresist application)
- IT 200133-25-1
 (prepn. of tert-Bu ester terminated dendrimer for resist application)
- IT 26153-38-8, 3,5-Dihydroxybenzaldehyde
 (reaction with di-tert-Bu carbonate in prepn. of ter-Bu carbonate terminated dendrimer for photoresist application)
- IT 34619-03-9, Di-tert-butyl carbonate
 (reaction with dihydroxybenzaldehyde in prepn. of ter-Bu carbonate terminated dendrimer for resist application)
- IT 5292-43-3
 (reaction with dihydroxybenzyl alc. in prepn. of tert-Bu ester terminated dendrimer for resist application)
- IT 29654-55-5, 3,5-Dihydroxybenzyl alcohol
 (reaction with α -bromo-tert-Bu acetate in prepn. of tert-Bu ester terminated dendrimer for resist application)
- IT 267874-32-8P
 (tert-Bu carbonate terminated dendrimer for chem. amplified resists for sub-100 nm photolithog.)

L70 ANSWER 15 OF 65 HCA COPYRIGHT 2007 ACS on STN
 134:123569 Positive-working photoresist composition and pattern-formation using it. Yamanaka, Tsukasa (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001013685 A 20010119, 45 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-181820 19990628.

GI



- AB The title photoresist compn. contains (a) an alkali-sol. resin comprising repeating units $[CH_2CH(C_6H_4OH-p)]^m$, I, and $[CH_2CHX]^k$ [$R_{1-4} = H$, X = arom. substituent; $0.3 \leq m \leq 0.90$; $0.05 \leq n \leq 0.30$; $0.05 \leq k \leq 0.40$], (b) a compd.

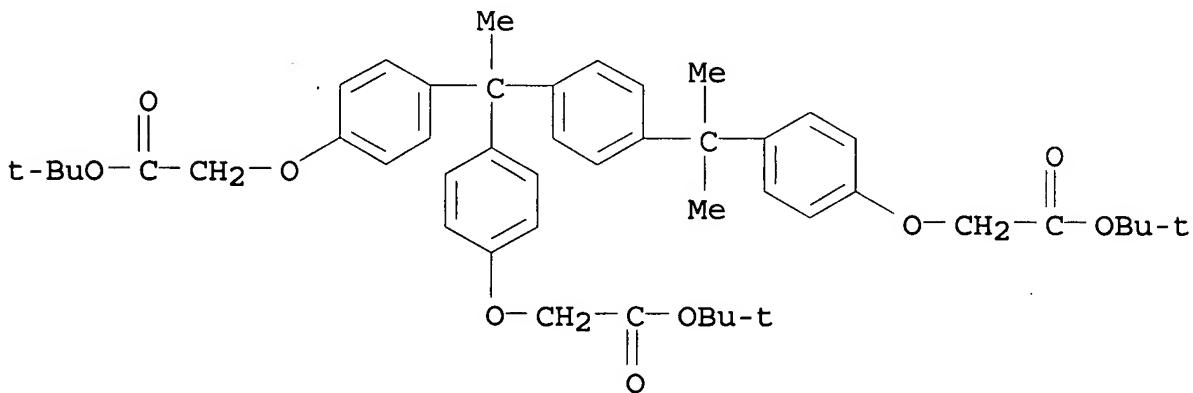
having groups that are cleaved by the action of acid, (c) a compd. generating an acid by irradn. with actinic rays or radiation, and (d) an org. basic compd. The compn. is applied on a substrate, patternwise exposed, baked, and developed with 2.38% aq. Me₄NOH soln. to form a **resist** pattern. The compn. shows high sensitivity toward actinic rays or radiation, esp. far UV radiation, developability, and thermal resistance and provides high resoln. patterns with good profile.

IT 153698-54-5

(acid decomposable compd.; pos. **photoresist** compn. contg. alkali-sol. resin, acid-decomposable compd., acid generator, and basic compd.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'--[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS C08F002-46; C08L025-18; G03F007-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST **photoresist** pos alkali soluble resin; acid decomposable compd **photoresists**; base acid generator

photoresistIT Positive **photoresists**

(pos. **photoresist** compn. contg. alkali-sol. resin, acid-decomposable compd., acid generator, and basic compd.)

IT 153698-54-5 153698-63-6

(acid decomposable compd.; pos. **photoresist** compn. contg. alkali-sol. resin, acid-decomposable compd., acid generator, and basic compd.)

IT 197447-16-8 214208-08-9 224568-31-4

(acid generator; pos. **photoresist** compn. contg.
alkali-sol. resin, acid-decomposable compd., acid generator, and
basic compd.)

IT 75-59-2, Tetramethylammonium hydroxide
(developer; pos. **photoresist** compn. contg. alkali-sol.
resin, acid-decomposable compd., acid generator, and basic
compd.)

IT 4397-14-2DP, 2,6-Dimethyl-4-methylolphenol, reaction products with
hydroxystyrene copolymer 24979-74-6DP, 4-Hydroxystyrene-styrene
copolymer, reaction products with methylolphenol 321164-59-4DP,
4-Hydroxystyrene-1-vinylnaphthalene copolymer, reaction products
with methylolphenol
(pos. **photoresist** compn. contg. alkali-sol. resin,
acid-decomposable compd., acid generator, and basic compd.)

IT 484-47-9 3001-72-7
(pos. **photoresist** compn. contg. alkali-sol. resin,
acid-decomposable compd., acid generator, and basic compd.)

L70 ANSWER 16 OF 65 HCA COPYRIGHT 2007 ACS on STN

133:357149 Dendrimers with thermally labile end groups: An alternative
approach to chemically amplified **resist** materials designed
for sub-100 nm lithography. Tully, David C.; Trimble, Alexander R.;
Frechet, Jean M. J. (Department of Chemistry, University of
California at Berkeley, Berkeley, CA, 94720-1460, USA). Advanced
Materials (Weinheim, Germany), 12(15), 1118-1122 (English)
2000. CODEN: ADVMEW. ISSN: 0935-9648. Publisher:
Wiley-VCH Verlag GmbH.

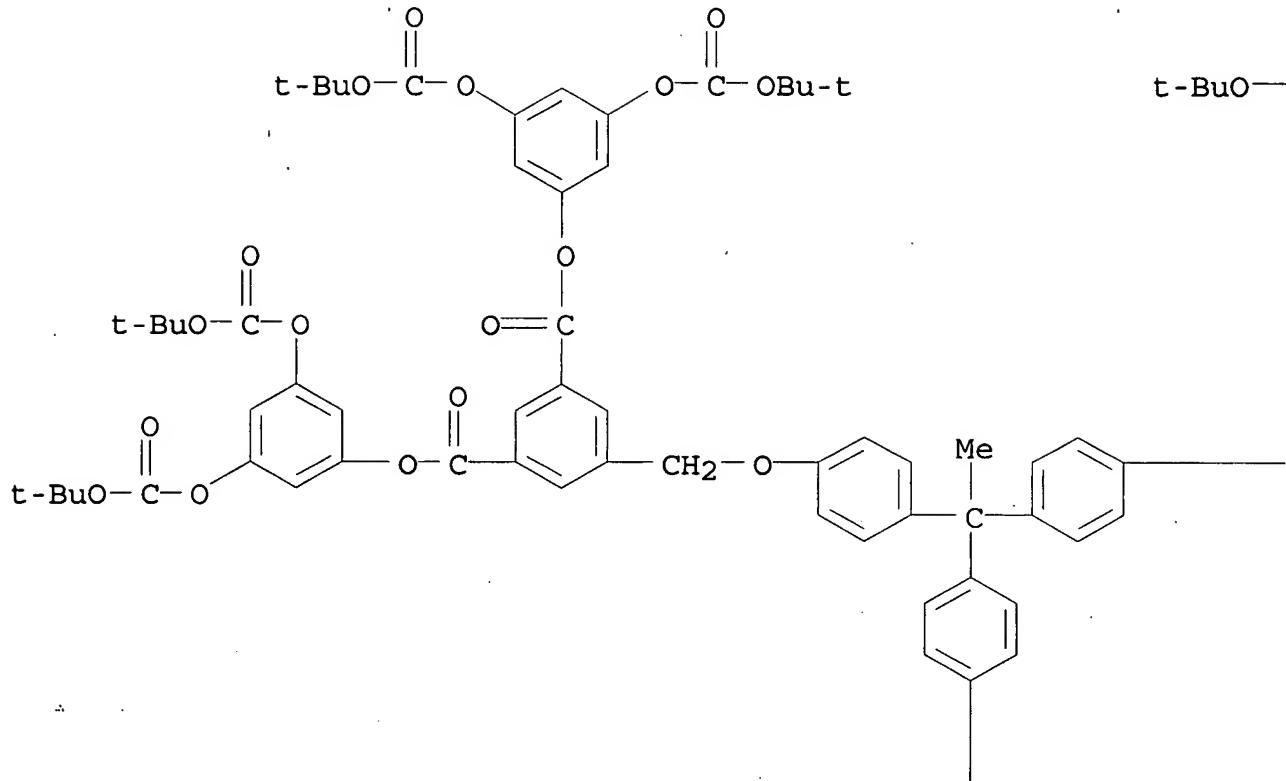
AB Chem. amplified **resists** are described which are based on
tert-butoxycarbonyloxy-terminated dendrimers and photoacid
generators. **Resist** formulations prepd. from these
dendrimers were highly sensitive to both deep-UV and electron-beam
exposures, providing reproducible patterning <100 nm.

IT 305323-50-6P
(lithog. chem. amplified **resists** using
tert-butoxycarbonyloxy-terminated dendrimers)

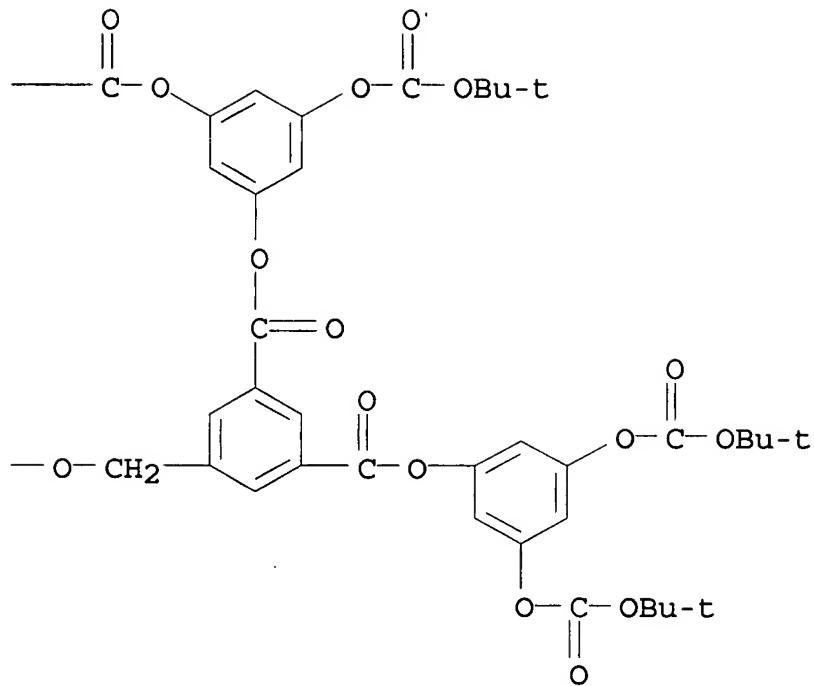
RN 305323-50-6 HCA

CN 1,3-Benzenedicarboxylic acid, 5,5',5'''-[ethylidynetris(4,1-
phenyleneoxymethylene)]tris-, hexakis[3,5-bis[[1,1-
dimethylethoxy]carbonyloxy]phenyl] ester (9CI) (CA INDEX NAME)

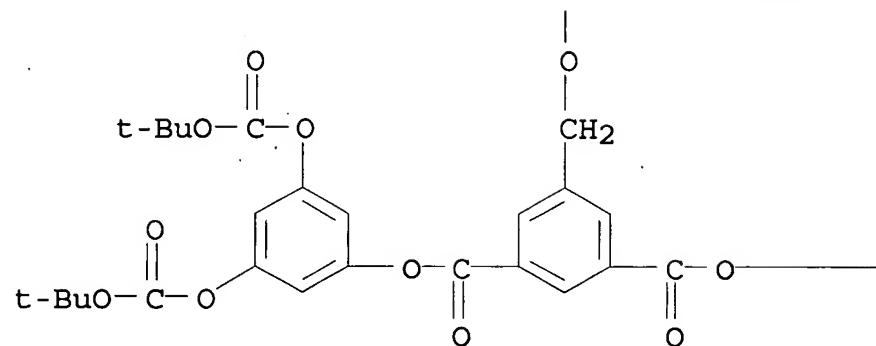
PAGE 1-A



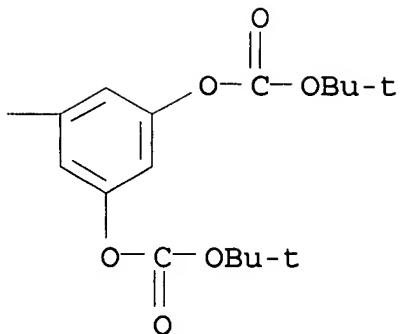
PAGE 1-B



PAGE 2-A



PAGE 2-B



- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST chem amplified lithog **resist** butoxycarbonyloxy terminated dendrimer; **photoresist** chem amplified butoxycarbonyloxy terminated dendrimer; electron beam **resist** chem amplified butoxycarbonyloxy terminated dendrimer
- IT Electron beam **resists**
Photoresists
 (chem. amplified; lithog. chem. amplified **resists** using tert-butoxycarbonyloxy-terminated dendrimers)
- IT 305323-50-6P 305820-71-7P
 (lithog. chem. amplified **resists** using tert-butoxycarbonyloxy-terminated dendrimers)
- IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate 240435-11-4
 (photoacid generator; lithog. chem. amplified **resists** using tert-butoxycarbonyloxy-terminated dendrimers)
- IT 26153-38-8P, 3,5-Dihydroxybenzaldehyde 267874-30-6P 267874-31-7P
 305323-33-5P 305323-36-8P 305323-39-1P 305323-42-6P
 305323-45-9P
 (synthesis of tert-butoxycarbonyloxy-terminated dendrimers for lithog. chem. amplified **resists** formulations)

L70 ANSWER 17 OF 65 HCA COPYRIGHT 2007 ACS on STN
 133:321704 Preparation of partially protective trisphenols for dissolution inhibitors of **photoresists**. Shiomi, Yasukazu; Miyagi, Sachiko (Honshu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000309561 A 20001107, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-247755 19990901. PRIORITY: JP 1999-49016 19990225.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

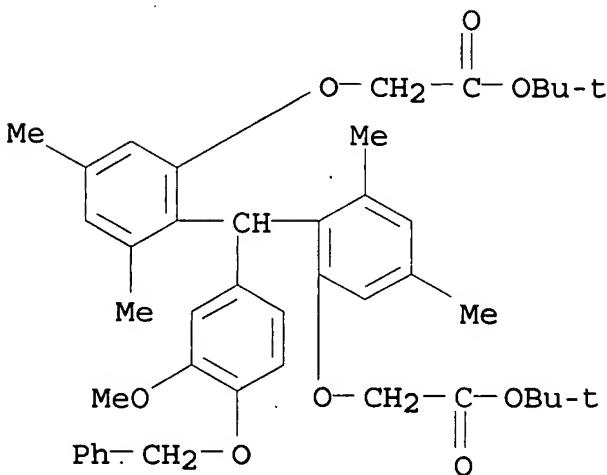
AB Title compds. I ($R_1 = C_{1-4}$ alkyl, alkoxy; $R_2 = C_{1-6}$ alkyl, C_{5-6} cycloalkyl; $X = (C_{1-4}$ alkoxy)carbonylmethyl, (C_{1-4} alkoxy)carbonyl, tetrahydropyranyl; $m = 0-2$; $n = 0-3$), useful for dissoln. inhibitors of chem. amplification photoresists (no data), are prep'd. by reaction of aldehydes II ($R_1, m =$ same as I) with benzyl halides in the presence of alkalies, reaction of resulting benzyloxybenzaldehydes with phenols III ($R_2, n =$ same as I) in the presence of acid catalysts, protection of two OH groups of resulting monobenzylated trisphenols with protecting agents selected from C_{1-4} alkyl haloacetates, di(C_{1-4} alkyl) carbonates, and 2,3-dihydro-4-H-pyran, and hydrogenolysis of protected trisphenols in the presence of catalysts. Salicylaldehyde was etherified with benzyl chloride in DMF in the presence of K_2CO_3 at 70° for 2 h, condensed with 2-cyclohexyl-5-methylphenol in MeOH in the presence of HCl at 60° for 3 h, protected with tert-Bu chloroacetate in DMF in the presence of K_2CO_3 at $70-100^\circ$ for 28 h, and hydrogenated in the presence of Pd/C in THF at 40° for 8 h to give 4,4'-bis(1-tert-butoxycarbonylmethoxy-2-cyclohexyl-5-methylphenyl)methyl-2-hydroxybenzene in 77.2% total yield.

IT 303108-91-0P

(prepn. of partially protective trisphenols by condensation of benzyloxybenzaldehydes with phenols and protection)

RN 303108-91-0 HCA

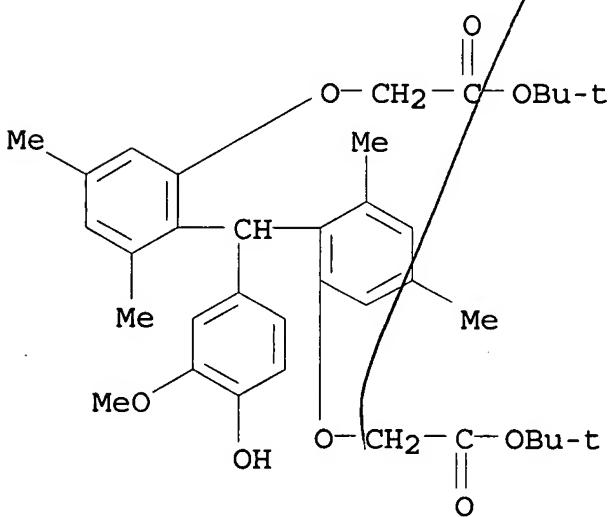
CN Acetic acid, 2,2'-'-[[[3-methoxy-4-(phenylmethoxy)phenyl]methylene]bis[(3,5-dimethyl-2,1-phenylene)oxy]]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IT 303108-89-6P

(prepn. of partially protective trisphenols by condensation of benzylxybenzaldehydes with phenols and protection)

RN 303108-89-6 HCA

CN Acetic acid, 2,2'--[[(4-hydroxy-3-methoxyphenyl)methylene]bis[(3,5-dimethyl-2,1-phenylene)oxy]]bis-, bis(1,1-dimethylethyl) ester (9CI)
(CA INDEX NAME)

IC ICM C07C069-712

ICS C07C067-343; C07D309-12; C07C037-20; C07C039-15; C07C045-71;
C07C047-575CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 74ST protected phenol prepn dissoln inhibitor **photoresist**;
benzyloxybenzaldehyde condensation phenol; alkyl haloacetate
protection trisphenol; carbonate alkyl protection trisphenol; pyran
protection trisphenolIT **Photoresists**(chem. amplification; prepn. of partially protective trisphenols
for dissoln. inhibitors of **photoresists**)IT 2426-87-1P, 3-Methoxy-4-benzyloxybenzaldehyde 5896-17-3P,
2-Benzylxybenzaldehyde 303108-82-9P 303108-83-0P 303108-85-2P
303108-88-5P 303108-90-9P **303108-91-0P**(prepn. of partially protective trisphenols by condensation of
benzyloxybenzaldehydes with phenols and protection)IT 303108-81-8P 303108-84-1P 303108-86-3P **303108-89-6P**(prepn. of partially protective trisphenols by condensation of
benzyloxybenzaldehydes with phenols and protection)

133:170234 Alkali-soluble or acid-decomposable polysiloxane and positively working **photoresist** compositions containing it. Mizutani, Kazuyoshi; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000219743 A 20000808, 59 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-24236 19990201.

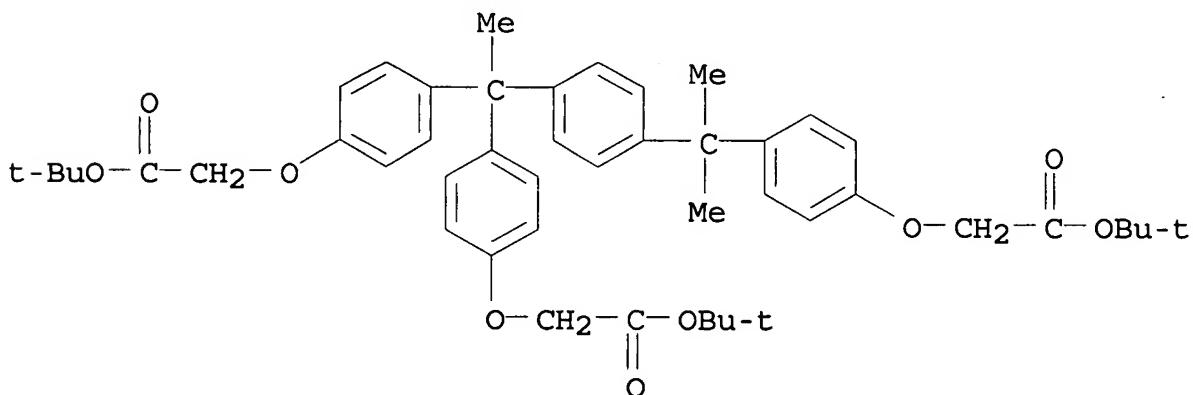
AB The alkali-sol. polysiloxane has a structure unit $[Si[(CH_2)_nLXZ]O_3/2]$ [I; n = 1-6; L = AOCO, ACO₂, ANHCO, ANHCO₂, ANHCONH, ACONH, ACONNH, ACONHCO, AS; A = none, arylene; X = none, divalent linkage group; Z = C₆H₅-1(OH)l, CY_{3-m}[C₆H₅-1(OH)l]_m; Y = H, alkyl, aryl, aralkyl; l, m = 1-3], or $[Si[(CH_2)_nOCOXZ]O_3/2]$ (II). The acid-decomposable polysiloxane has (A) the structure unit I whose phenolic OH is (partially) protected with acid-decomposable group or (B) structure units II and $[Si[(CH_2)_nOCOXZ']O_3/2]$ [III; n = 1-6; Z' = C₆H₅-1(OR)l, CY_{3-m}[C₆H₅-1(OR)l]_m; R = acid-decomposable group]. The **photoresist** compn. contains an acid-decomposable polysiloxane having the structure unit III and a photoacid generator. The **photoresist** compn. contains (A) an alkali-sol. polysiloxane having structure unit II. (B) a photoacid generator, and (C) phenolic compds. (partially) protected with an acid-decomposable group or arom. or aliph. carboxylic acid (partially) protected with an acid-decomposable group. The compn. shows high sensitivity and gives high-resoln. **resist** images to be useful for manuf. of semiconductor IC.

IT 153698-54-5

(**photoresist** compn. contg. alkali-sol. or acid-decomposable polysiloxane)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



ICS C08K005-02; C08K005-3492; C08K005-36; C08K005-41; C08K005-42;
 C08L083-06; G03F007-004; G03F007-039; G03F007-075; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38, 76
 ST alkali soluble polysiloxane acid decomposable **photoresist**;
 pos **resist** photo siloxane alkali soluble; semiconductor IC
 pos **photoresist** polysiloxane
 IT Positive **photoresists**
 (photoresist compn. contg. alkali-sol. or
 acid-decomposable polysiloxane)
 IT Polysiloxanes, preparation
 (photoresist compn. contg. alkali-sol. or
 acid-decomposable polysiloxane)
 IT 153698-46-5 197447-16-8 287925-54-6 287925-55-7
 (photoacid generator; **photoresist** compn. contg.
 alkali-sol. or acid-decomposable polysiloxane)
 IT 109-53-5DP, Isobutyl vinyl ether, reaction products with phenolic
 OH-contg. polysiloxanes 109-92-2DP, Ethyl vinyl ether, reaction
 products with phenolic OH-contg. polysiloxanes 287925-26-2DP,
 reaction products with Bu vinyl ether 287925-26-2P
 287925-28-4DP, reaction products with Et vinyl ether
 287925-30-8DP, reaction products with Bu vinyl ether 287925-30-8P
 287925-32-0P 287925-34-2P 287925-36-4P 287925-39-7P
 287925-40-0P 287925-42-2P 287925-44-4P 287925-46-6P
 287925-48-8P 287925-50-2P 287925-51-3P 287925-53-5P
 (photoresist compn. contg. alkali-sol. or
 acid-decomposable polysiloxane)
 IT 153698-54-5 153698-63-6 199432-82-1 228101-60-8
 287925-56-8
 (photoresist compn. contg. alkali-sol. or
 acid-decomposable polysiloxane)

L70 ANSWER 19 OF 65 HCA COPYRIGHT 2007 ACS on STN
 133:142612 Calixarenes for use as dissolution inhibitors in lithographic
photoresist compositions. Ito, Hiroshi; Nakayama, Tomonari;
 Ueda, Mitsuru (International Business Machines Corp., USA). U.S. US
 6093517 A 20000725, 18 pp. (English). CODEN: USXXAM.
 APPLICATION: US 1998-127325 19980731.

AB The invention relates generally to photolithog., particularly, to
 dissoln. inhibitors for use in a lithog. **photoresist**
 compn. The lithog. **photoresist** compn. contains novel
 calixarene compds., particularly calix[4]resorcinarenes that are
 partially or wholly protected with acid-labile groups, as dissoln.
 inhibitors. A process for using the compn. to generate
resist images on a substrate is described, i.e., in the
 manuf. of integrated circuits or the like.
 IT 286455-03-6P 286455-04-7P 286455-05-8P

286455-06-9P 286455-07-0P 286455-08-1P

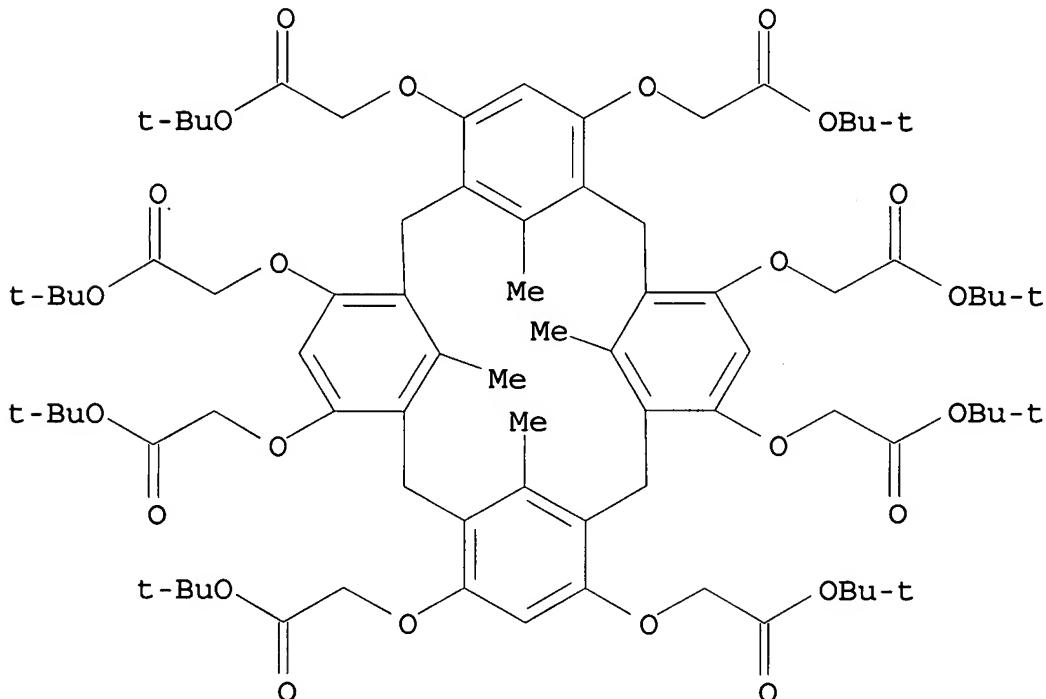
286455-26-3P 286455-27-4P 286455-28-5P

286455-29-6P 286455-30-9P 286455-31-0P

(prepn. of, calixarenes for use as dissoln. inhibitors in lithog. photoresist compns.)

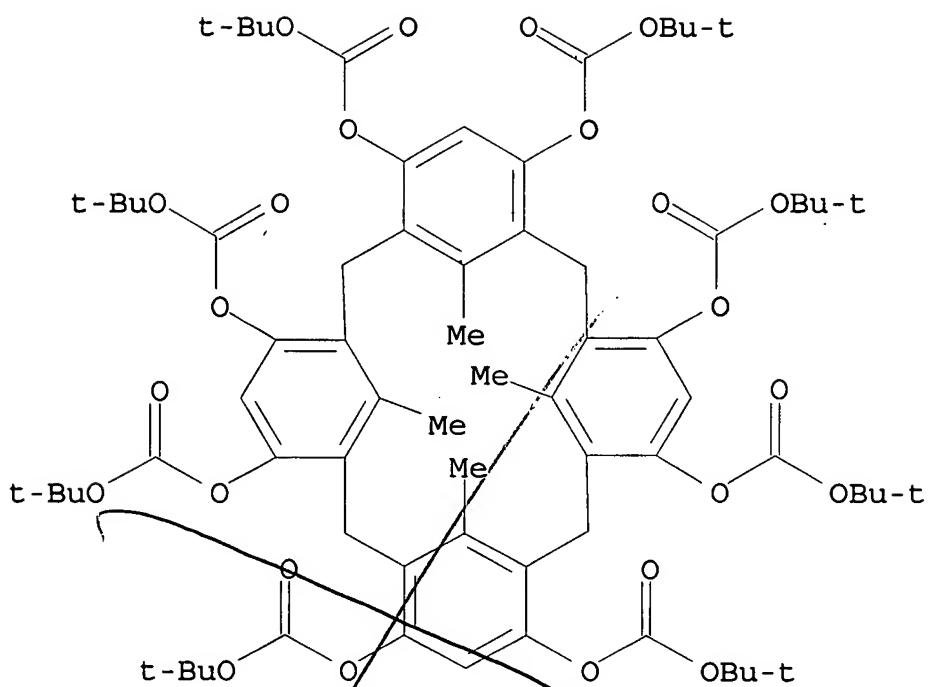
RN 286455-03-6 HCA

CN Acetic acid, 2,2',2'',2''',2'''',2''''',2''''''',2'''''''-
[[25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos
a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
4,6,10,12,16,18,22,24-octayl]octakis(oxy)octakis-,
octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX
NAME)



RN 286455-04-7 HCA

CN Carbonic acid, 25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.1
15,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-
dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)
ester, stereoisomer (9CI) (CA INDEX NAME)

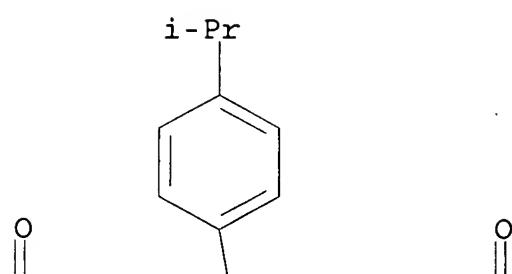


RN 286455-05-8 HCA
CN Acetic acid, 2,2',2'',2''',2''',2''',2''',2''',2''',2'''''-
[[25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,
7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,
23-dodecaene-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-,
octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX
NAME)

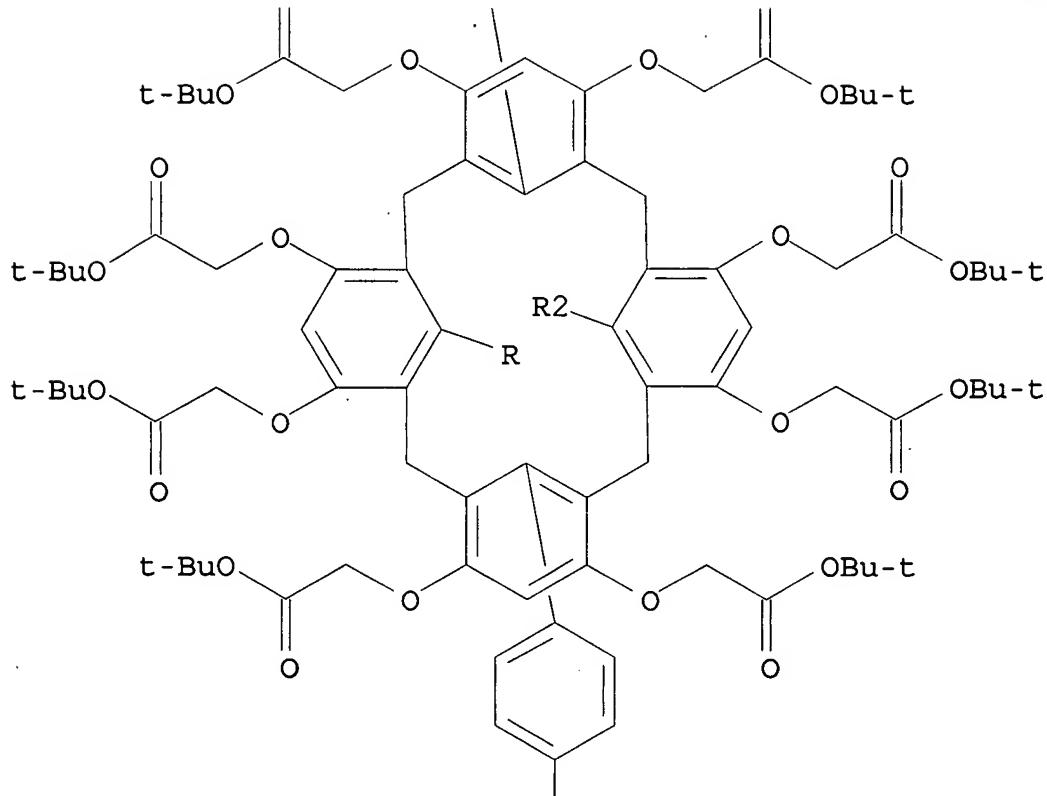
LEE 10/531,208

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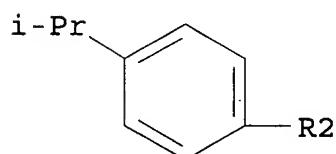
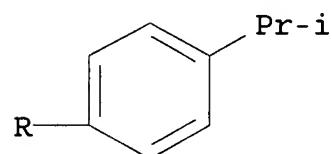
PAGE 1-A



PAGE 2-A



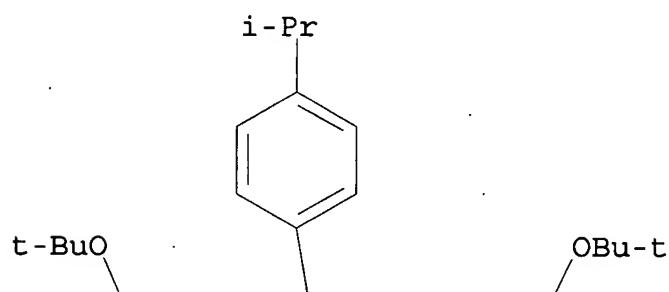
PAGE 3-A



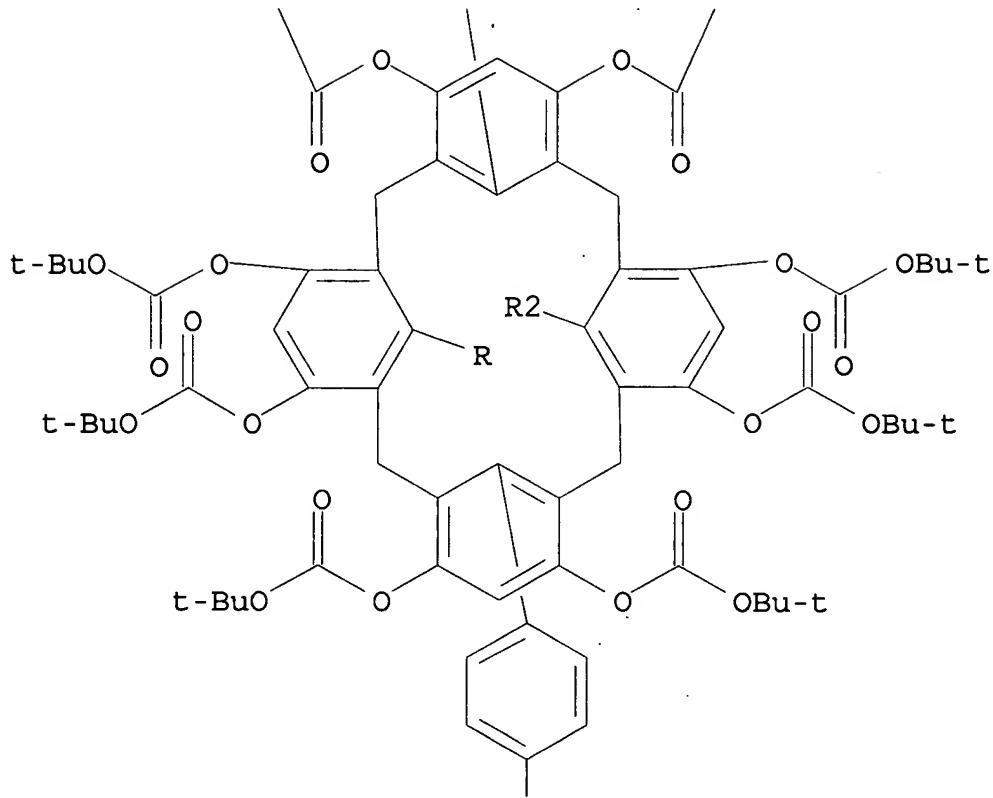
RN 286455-06-9 HCA

CN Carbonic acid, 25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)

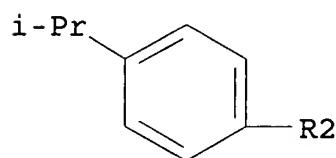
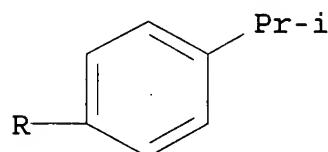
PAGE 1-A



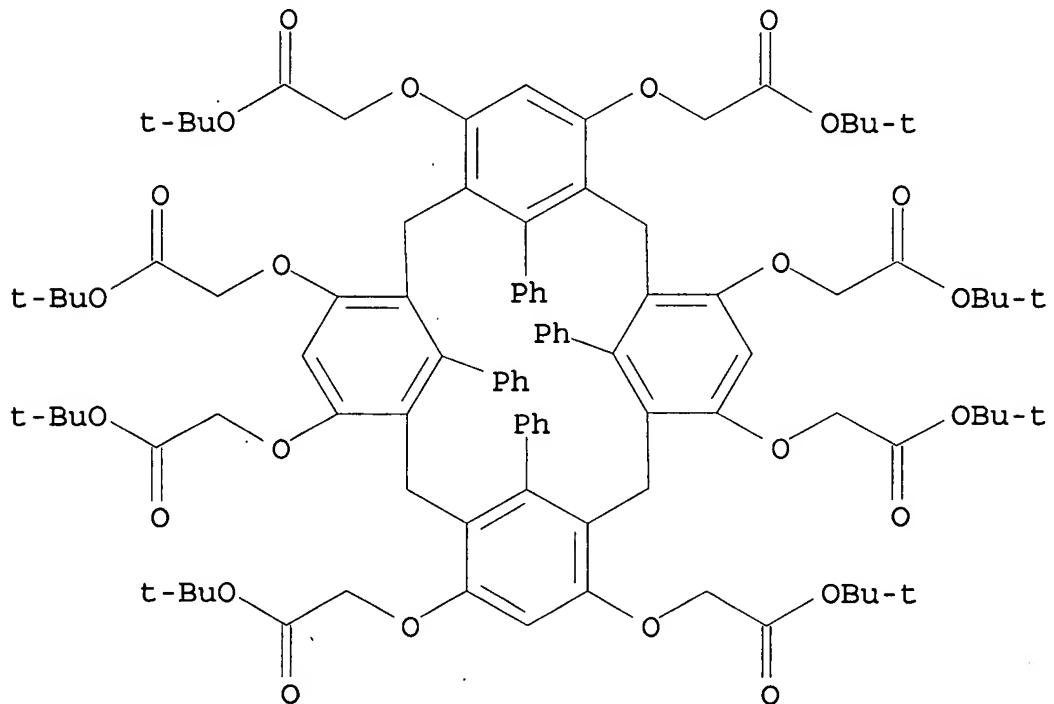
PAGE 2-A



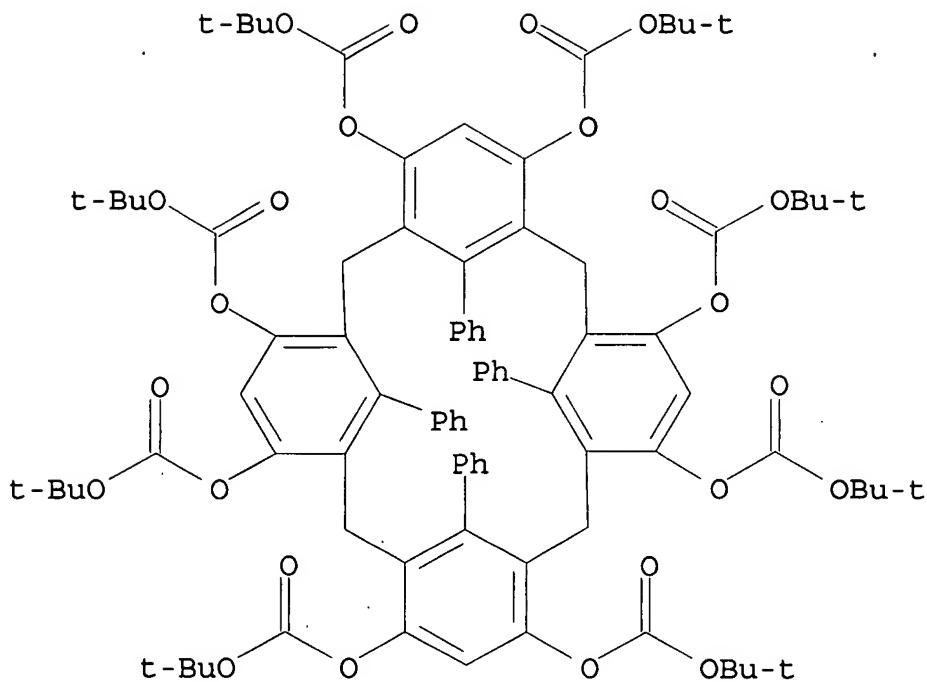
PAGE 3-A



RN 286455-07-0 HCA
 CN Acetic acid, 2,2',2'',2''',2'''',2''''',2''''''',2'''''''-
 [[25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-
 a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
 4,6,10,12,16,18,22,24-octayl]octakis(oxy)octakis-,
 octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX
 NAME)

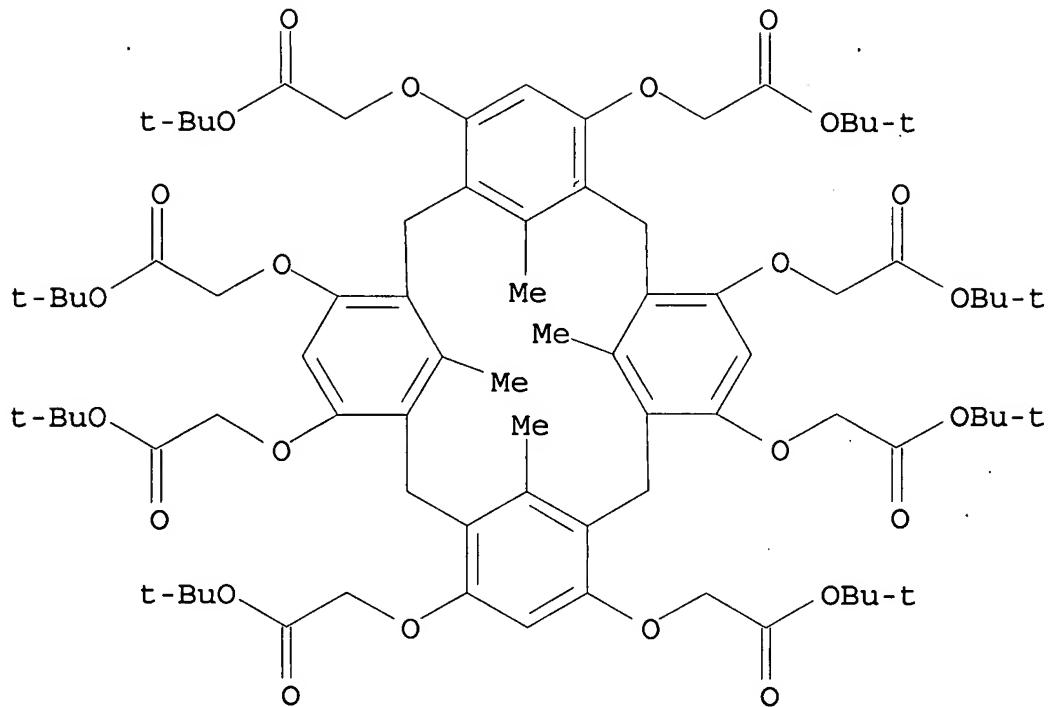


RN 286455-08-1 HCA
 CN Carbonic acid, 25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.1
 15,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-
 dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)
 ester, stereoisomer (9CI) (CA INDEX NAME)



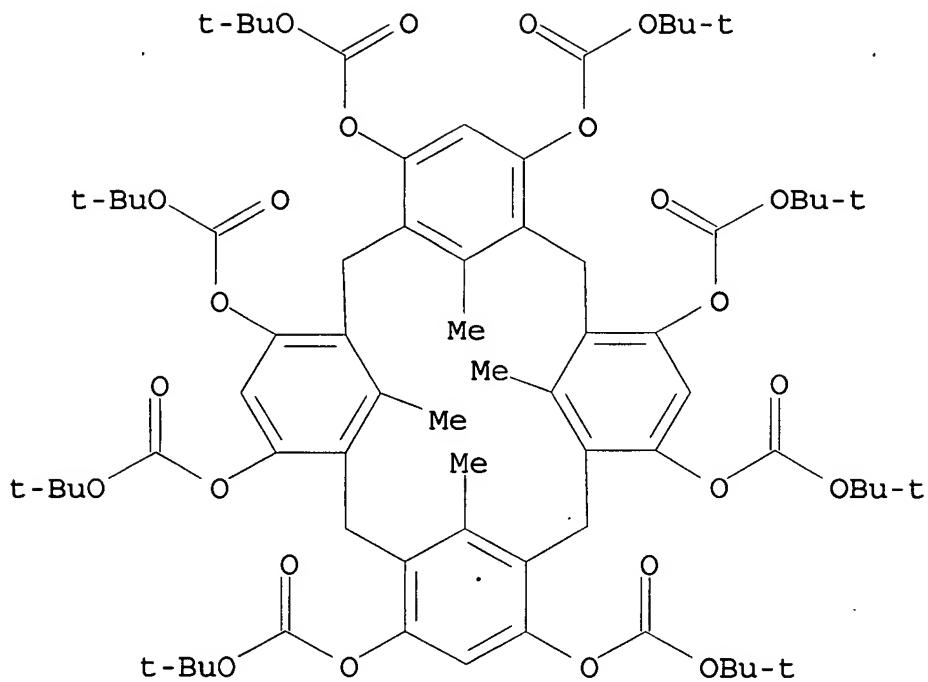
RN 286455-26-3 HCA

CN Acetic acid, 2,2',2'',2''',2'''',2''''',2''''''',2''''''''',2''''''''''-
[[25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos
a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
4,6,10,12,16,18,22,24-octayl]octakis(oxy)octakis-,
octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX
NAME)



RN 286455-27-4 HCA

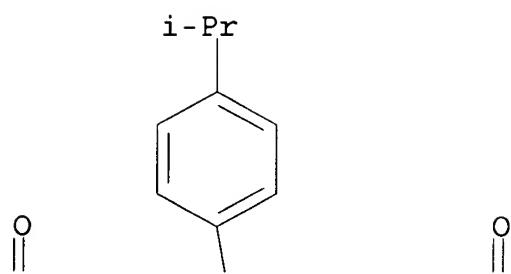
CN Carbonic acid, 25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.1 15,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)



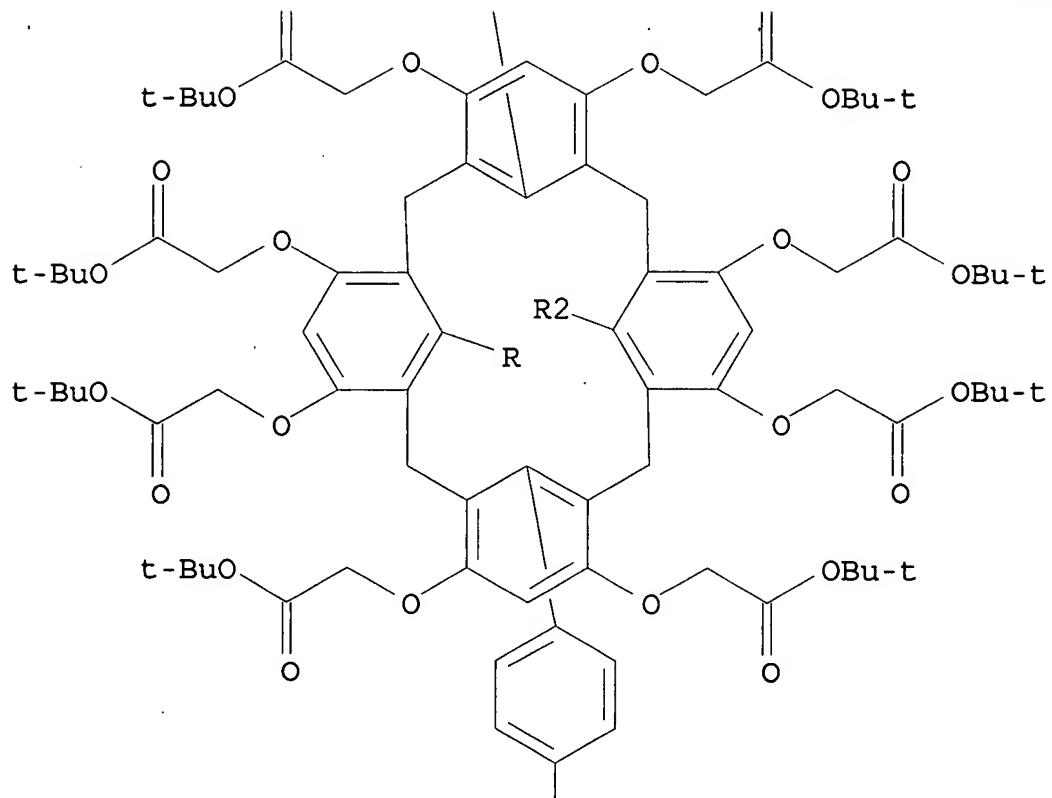
RN 286455-28-5 HCA

CN Acetic acid, 2,2',2'',2''',2'''',2''''',2''''''',2'''''''',2''''''''''-
[[25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,
7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,
23-dodecaene-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-,
octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX
NAME)

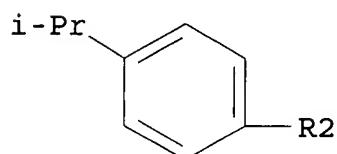
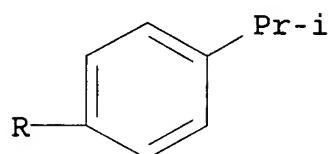
PAGE 1-A



PAGE 2-A



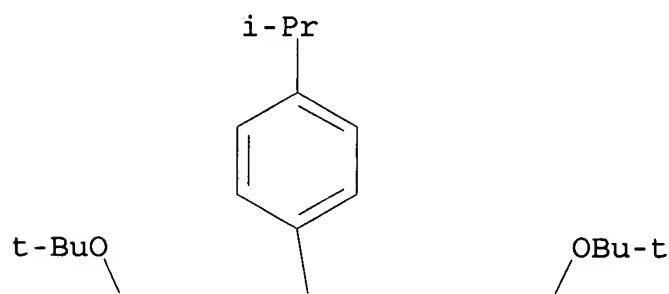
PAGE 3-A



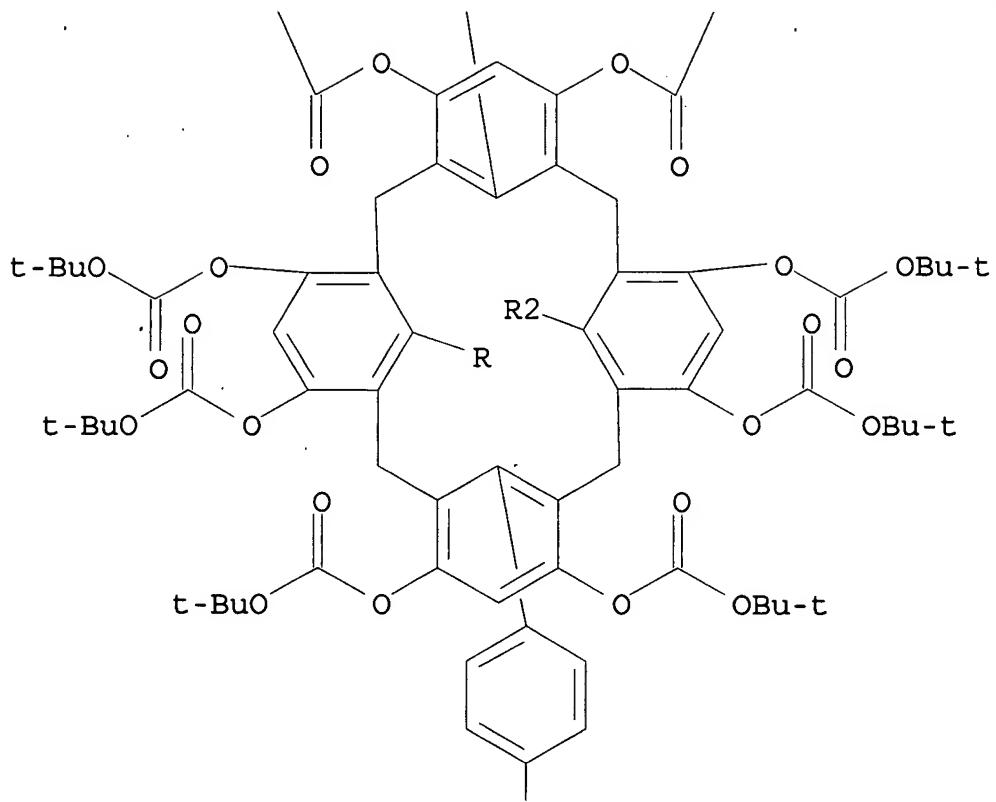
RN 286455-29-6 HCA

CN Carbonic acid, 25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)

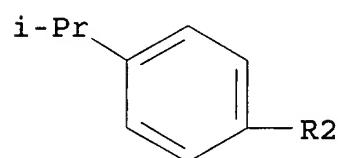
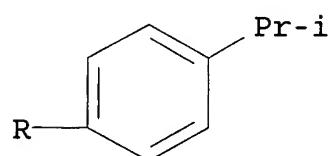
PAGE 1-A



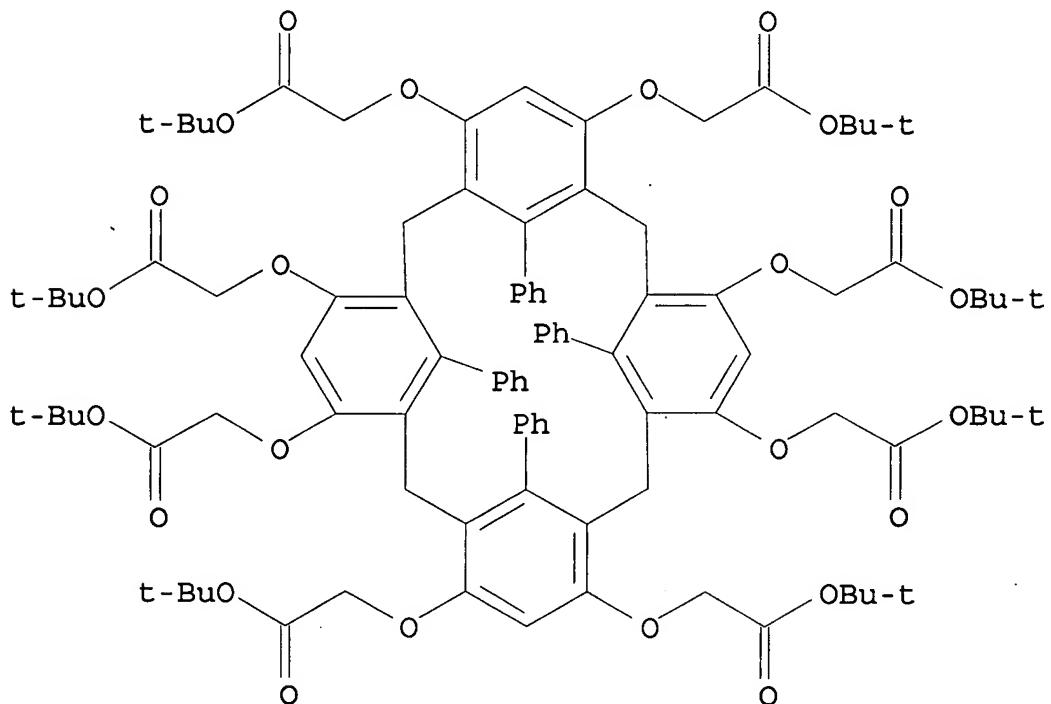
PAGE 2-A



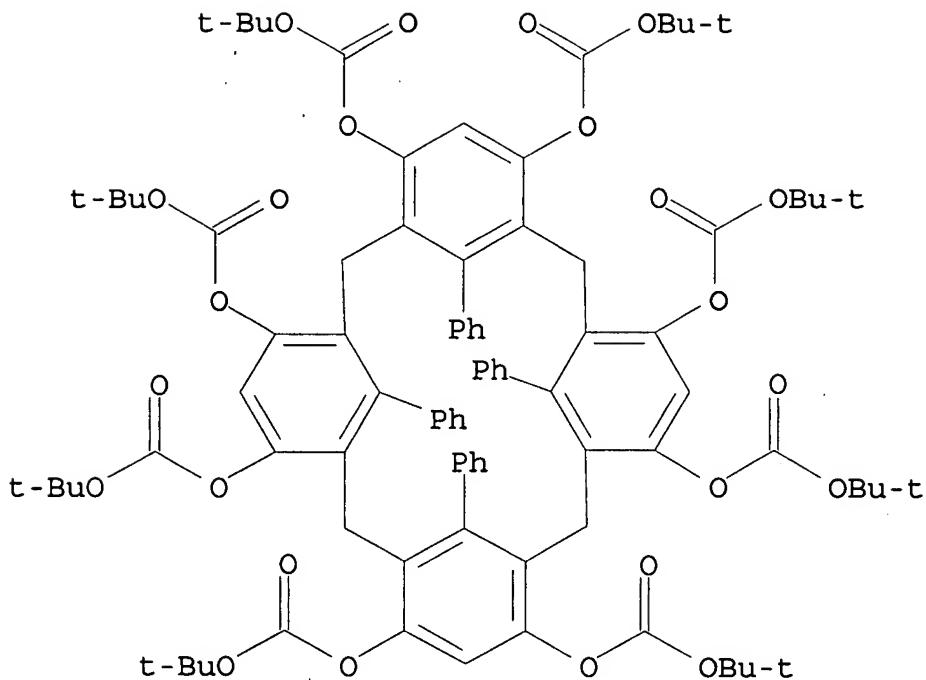
PAGE 3-A



RN 286455-30-9 HCA
 CN Acetic acid, 2,2',2'',2''',2'''',2''''',2''''''',2'''''''-
 [[25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.115,19]octacos
 a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-
 4,6,10,12,16,18,22,24-octayl]octakis(oxy)octakis-,
 octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX
 NAME)



RN 286455-31-0 HCA
 CN Carbonic acid, 25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.1
 15,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-
 dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)
 ester, stereoisomer (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS C07C041-00

INCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25, 35

ST calixarene dissoln inhibitor lithog **photoresist**

IT Dissolution

Integrated circuits

Photolithography

Photoresists

(calixarenes for use as dissoln. inhibitors in lithog. photoresist compns.)

IT Dendritic polymers

Metacyclophanes

(calixarenes for use as dissoln. inhibitors in lithog. photoresist compns.)

IT 65338-98-9

(dissoln. behavior of calixarenes for use as dissoln. inhibitors in lithog. photoresist compns.)

IT 274681-52-6P 286437-13-6P 286437-14-7P 286455-02-5P

286455-03-6P 286455-04-7P 286455-05-8P

286455-06-9P 286455-07-0P 286455-08-1P

286455-24-1P 286455-25-2P 286455-26-3P

286455-27-4P 286455-28-5P 286455-29-6P

286455-30-9P 286455-31-0P

(prepn. of, calixarenes for use as dissoln. inhibitors in lithog. photoresist compns.)

L70 ANSWER 20 OF 65 HCA COPYRIGHT 2007 ACS on STN

132:341060 Dendrimer-based chemically amplified resist

materials. Tully, David C.; Trimble, Alexander R.; Frechet, Jean M. J. (Department of Chemistry, University of California, Berkeley, CA, 94720-1460, USA). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 41(1), 142-143 (English) 2000. CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American Chemical Society, Division of Polymer Chemistry.

AB The authors have been utilizing the unusual properties of dendritic polymers in hopes of achieving an improved class of resist materials with the capability of imaging features with mol. scale resoln. Several new dendrimers were synthesized continuing acid and thermally labile groups on their periphery. The tert-Bu ester and carbonate peripheral groups can be removed by an acid-catalyzed thermolysis to drastically alter the solv. properties of the dendrimer, thus forming the basis for a 2-tone chem. amplified resist material. This 2-tone system shows a high sensitivity towards both DUV and electron beam irradn. The authors were able to pattern feature sizes below 100 nm using e-beam lithog.

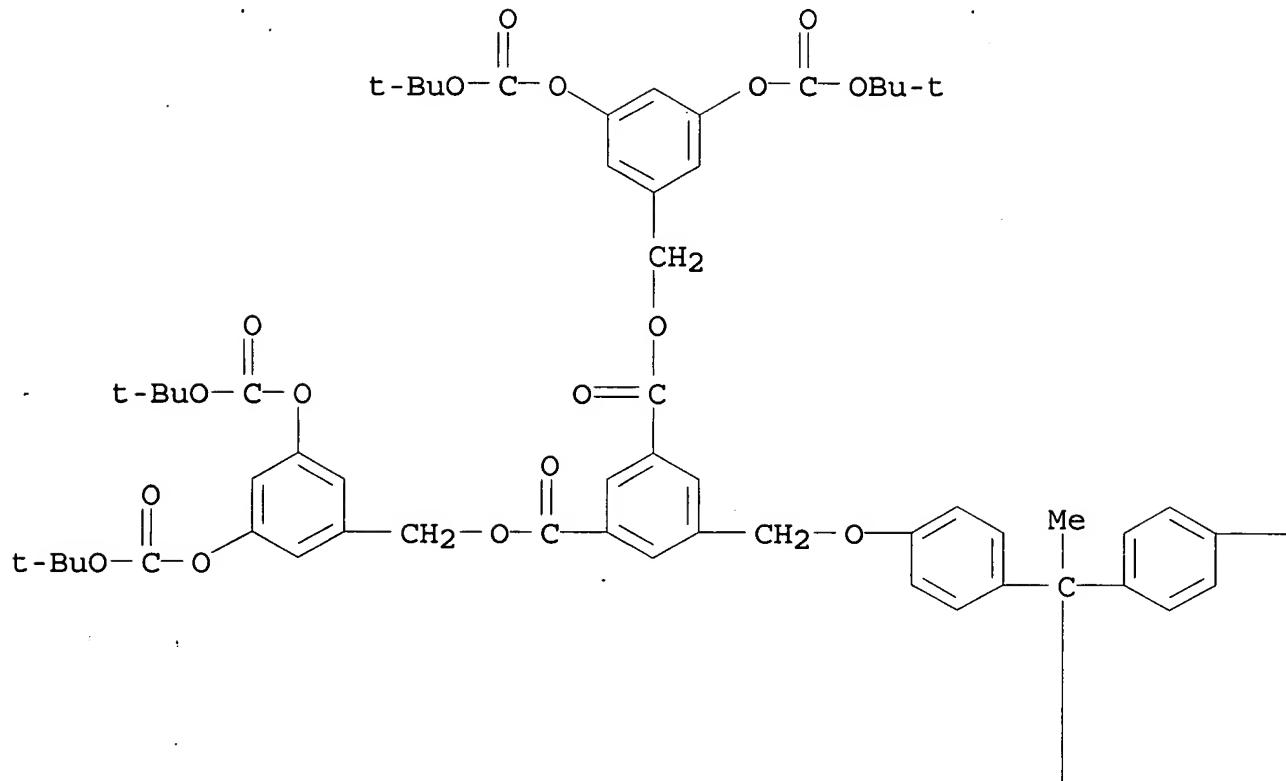
IT 267874-32-8P

(dendrimer-based chem. amplified resist material for fabrication of DRAMs below 100 nm)

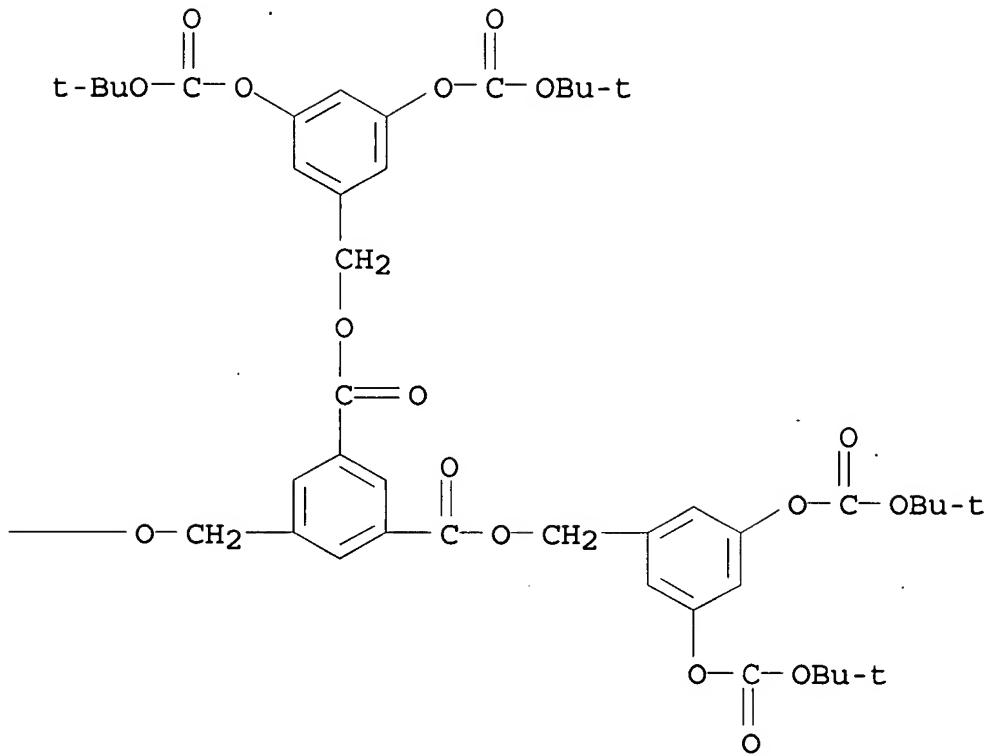
RN 267874-32-8 HCA

CN 1,3-Benzenedicarboxylic acid, 5,5',5'''-[ethylidynetris(4,1-phenyleneoxymethylene)]tris-, hexakis[[3,5-bis[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]methyl] ester (9CI) (CA INDEX NAME)

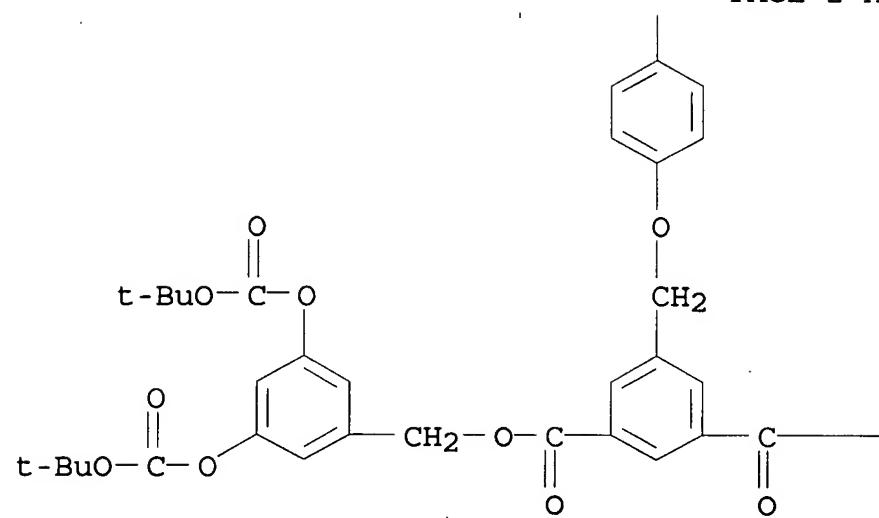
PAGE 1-A



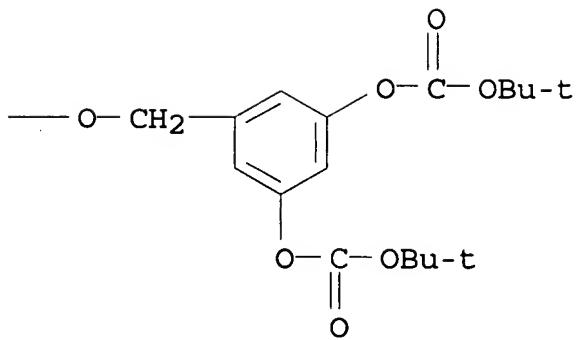
PAGE 1-B



PAGE 2-A



PAGE 2-B



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST dendrimer amplified **resist** tert butyl ester poly benzyl ether

IT Memory devices

(DRAM (dynamic random access); dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)

IT **Resists**

(chem. amplified; dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)

IT Electron beam lithography

(dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)

IT Dendritic polymers

(dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)

IT 267874-31-7P 267874-32-8P 267890-50-6P

(dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)

IT 99-10-5, 3,5-Dihydroxybenzoic acid 26153-38-8,
3,5-Dihydroxybenzaldehyde 200133-25-1 267663-15-0 267874-29-3
267874-30-6

(prepn. of dendrimer-based chem. amplified **resist** material using)

LEE 10/531,208

132:7560 Acid-decomposable group-containing calixarenes, calixresorcinarenes, and photosensitive composition for resist. Nishikubo, Tadaomi; Kameyama, Atsushi; Ota, Yoshihisa (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11322656 A 19991124 Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-146597 19980511.

GI For diagram(s), see printed CA Issue.

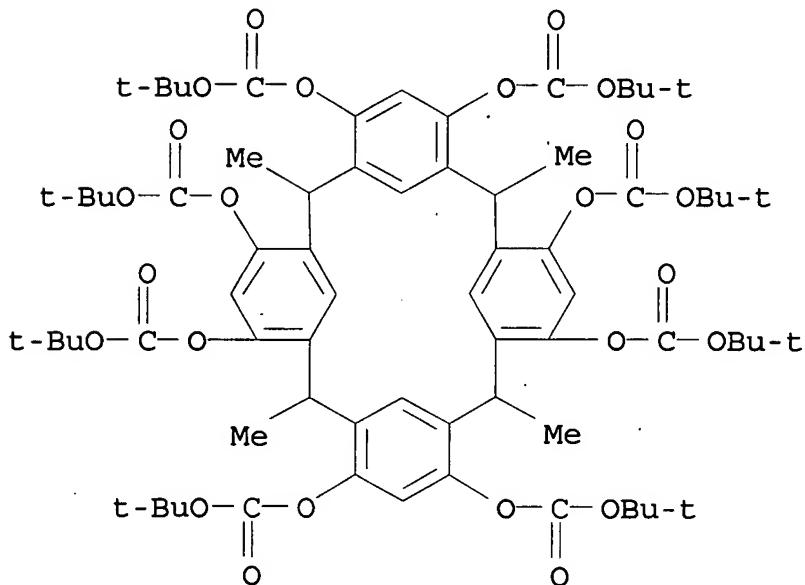
AB The compn. contains ≥ 1 calix(resorcin)arenes I ($R_1, R_2 = H$, C1-5 alkyl; $R_3 = H, O_2CBu-t, SiMe_3$, cyclohexenyl; $n = 1-3$; $m = 4-12$) and a photo-acid generator. The compn. is useful as pos.-working chem. amplified resists.

IT 250715-31-2P

(acid-decomposable group-contg. calixarenes or calixresorcinarenes for photoresists)

RN 250715-31-2 HCA

CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM C07C043-235

ICS C07C069-33; C07F007-18; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25

ST calixarene calixresorcinarene photosensitive compn resist; acid decomposable calixarene calixresorcinarene photoresist

IT Positive photoresists

(acid-decomposable group-contg. calixarenes or

- calixresorcinarenes for photoresists)
- IT Metacyclophanes
 (calixarenes; acid-decomposable group-contg. calixarenes or
 calixresorcinarenes for photoresists)
- IT 108-46-3, 1,3-Benzenediol, reactions 123-63-7 1521-51-3,
 3-Bromocyclohexene 68971-82-4, p-tert-Butylcalix(8)arene
 250715-27-6 250715-28-7, p-Methylcalix(7)arene 250715-30-1,
 p-Methylcalix(8)arene
 (acid-decomposable group-contg. calixarenes or
 calixresorcinarenes for photoresists)
- IT 65338-98-9P, Calix[4]resorcinarene 68971-83-5P 160399-38-2P
 250715-26-5P 250715-31-2P 250715-32-3P 250715-33-4P
 250715-34-5P 250715-35-6P 250715-36-7P 250715-37-8P
 250715-39-0P 250715-40-3P
 (acid-decomposable group-contg. calixarenes or
 calixresorcinarenes for photoresists)

L70 ANSWER 22 OF 65 HCA COPYRIGHT 2007 ACS on STN

131:293195 Novel dissolution inhibitors based on calixarene derivatives for use in chemical amplification **resists**. Ito, Hiroshi; Nakayama, Tomonari; Ueda, Mitsuru; Sherwood, Mark; Miller, Dolores (IBM Almaden Research Center, San Jose, CA, 95120, USA). Polymeric Materials Science and Engineering, 81, 51-52 (English) 1999
 . CODEN: PMSEDG. ISSN: 0743-0515. Publisher: American Chemical Society.

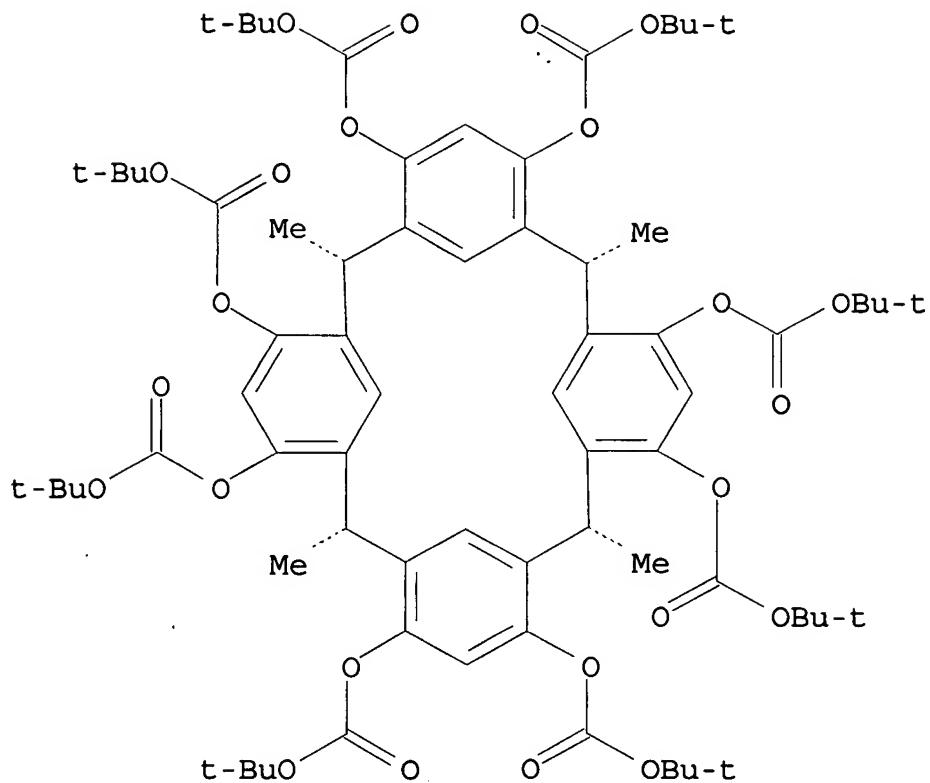
AB Calix[4]resorcinarenes were synthesized by condensing resorcinol with aldehydes (acetaldehyde, benzaldehyde, and 4-isopropylbenzaldehyde) and sepd. into C4v and C2v, isomers. All eight OH groups were protected with acid-labile groups such as tBOC and tBuOCOCH₂. The protected calixarenes have been found to be excellent dissoln. inhibitors for use in chem. amplification **resists**.

IT 246023-01-8P 246023-03-0P 246023-06-3P
 (novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)

RN 246023-01-8 HCA

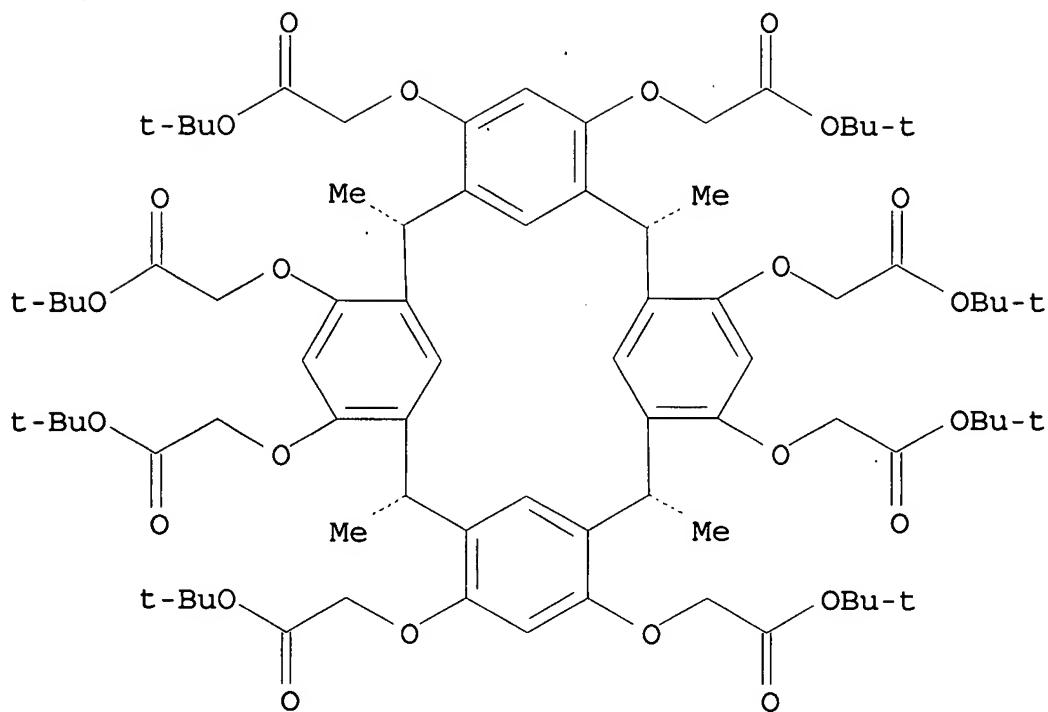
CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octetyl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 246023-03-0 HCA
 CN Acetic acid, 2,2',2'',2''',2'''',2''''',2''''''',2'''''''-[(2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl)octakis(oxy)octakis-, octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)

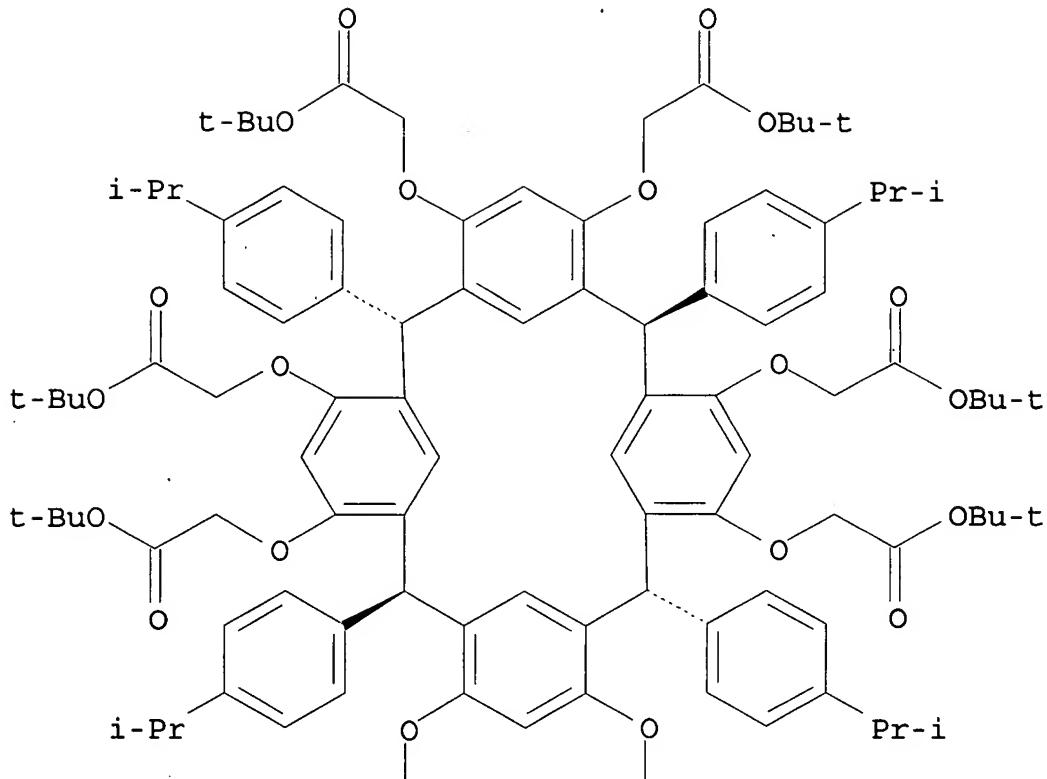
Relative stereochemistry.



RN 246023-06-3 HCA
 CN Acetic acid, 2,2',2'',2''',2'''',2''''',2'''''''',2'''''''''-[[2,8,14,20-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octyl]octakis(oxy)]octakis-,
 octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX
 NAME)

Relative stereochemistry.

PAGE 1-A



PAGE 2-A



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

ST dissoln inhibitor calixarene chem amplification **photoresist**

IT Photolithography

Photoresists

Semiconductor device fabrication

(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)

IT Dendritic polymers

- (novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT 159296-87-4, 4-Hydroxystyrene-tert-butyl acrylate copolymer
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT 74410-61-0DP, t-butoxycarbonyl- or t-butoxycarbonylmethyl-protected 145843-14-7DP, t-butoxycarbonyl- or t-butoxycarbonylmethyl-protected 246023-01-8P 246023-03-0P 246023-04-1DP, t-butoxycarbonyl- or t-butoxycarbonylmethyl-protected 246023-06-3P 246024-56-6DP, t-butoxycarbonyl- or t-butoxycarbonylmethyl-protected
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT 75-07-0, Acetaldehyde, reactions 100-52-7, Benzaldehyde, reactions 108-46-3, Resorcinol, reactions 122-03-2, 4-Isopropylbenzaldehyde 5292-43-3, tert-Butyl bromoacetate 24424-99-5, Di-tert-butyl dicarbonate
(prepn. of novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT 74410-61-0P 74708-10-4P 145843-14-7DP, t-butoxycarbonyl- or t-butoxycarbonylmethyl-protected 246023-04-1P 246023-05-2P 246024-56-6P
(prepn. of novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)

L70 ANSWER 23 OF 65 HCA COPYRIGHT 2007 ACS on STN

130:330572 Radiation-sensitive resin composition useful as chemically amplified **resist**. Ohta, Yoshihisa; Matsuda, Daiichi; Yumoto, Yoshitsugu (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11109613 A 19990423 Heisei, 21 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 1997-281078 19970930.

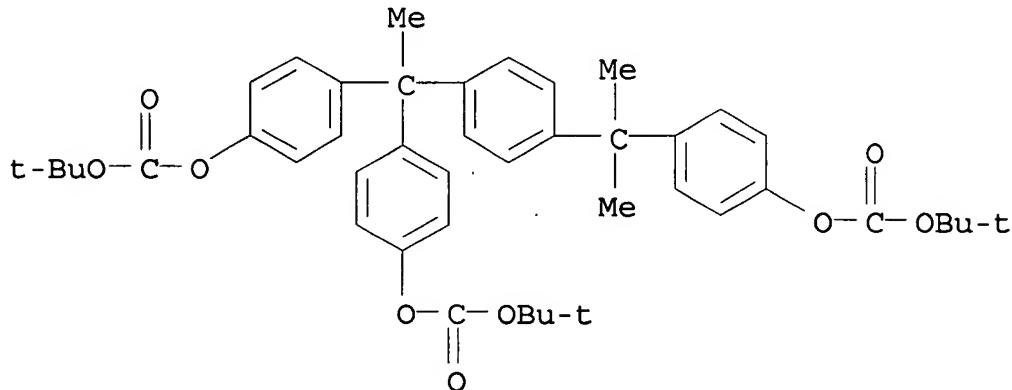
AB The title resin compn. contains (a) a fullerene deriv. sol. in solvents for **resists**, (b) a radiation-sensitive acid-generator, and (c) either an acid-dissocg. group-protected resin which is insol. or slightly soln. in alkali and becomes alkali-sol. when the group is dissocd. or an alkali-sol. resin and an alkali solv.-controlling agent. The compn. may contain (a), (b), an alkali-sol. resin, and a compd. which cross-links the resin in the presence of acid. The compn. shows high photosensitivity and provides a high resoln. pattern with resoln. $\leq 0.2 \mu\text{m}$ and good profile in edge roughness.

IT 151533-21-0
(solv.-controlling agent; **resist** compn. contg. fullerene deriv.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]

] -1-methylethyl]phenyl]ethylidene]di-4,1-phenylene
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027; C08L101-00
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST resist fullerene acid generator; alkali soluble resin
resist
- IT Aminoplasts
(crosslinking agent; resist compn. contg. fullerene deriv.)
- IT Resists
(resist compn. contg. fullerene deriv.)
- IT Fullerenes
(resist compn. contg. fullerene deriv.)
- IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate
103979-48-2 133710-62-0 138529-81-4,
Bis(cyclohexylsulfonyl)diazomethane
(acid generator; resist compn. contg. fullerene deriv.)
- IT 9011-05-6, MX 290 17464-88-9, Cymel 1174
(crosslinking agent; resist compn. contg. fullerene deriv.)
- IT 24979-70-2, Poly(p-hydroxystyrene) 24979-74-6,
p-Hydroxystyrene-styrene copolymer 59269-51-1D,
Poly(hydroxystyrene), ethers 146958-39-6 153218-90-7
155214-68-9, Poly(hydroxystyrene) tert-butyl carbonate 155382-83-5
155944-50-6 164078-83-5 170501-65-2 170501-68-5 170501-71-0
209545-11-9 223769-43-5
(resist compn. contg. fullerene deriv.)
- IT 97-64-3, Ethyl 2-hydroxypropionate 84540-57-8, Propylene glycol methyl ether acetate
(solvent; resist compn. contg. fullerene deriv.)
- IT 117458-06-7 151533-21-0

(soly.-controlling agent; resist compn. contg. fullerene deriv.)

L70 ANSWER 24 OF 65 HCA COPYRIGHT 2007 ACS on STN
 130:304048 Positively-working photosensitive colored composition and color filter using same. Suzuki, Nobuo (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11095435 A 19990409 Heisei, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-252177 19970917.

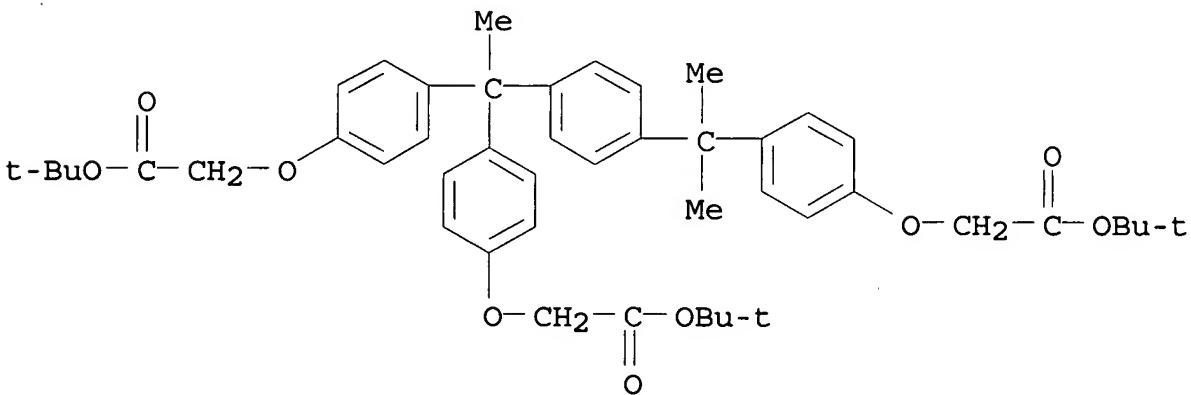
AB The title compn. contains (a) a resin insol. in water and sol. in aq. alk. solns., (b) a compd. generating acid under active ray or radiation irradn., (c) a low-mol.-wt. acid-decomposable dissoln.-inhibiting compd. with mol. wt. ≤ 3000 which has acid-decomposable groups whose solv. in alk. developing solns. is increased by the action of acid, and (d) a colorant. The compn. may contain (a) a resin having groups which are decompd. by the action of acid to increase the solv. in alk. developing solns., (b) a compd. generating acid under active ray or radiation irradn., (c) an org. basic compd., and (d) a colorant. A color filter using the compn. is also claimed. The compn. shows high photosensitivity and provides high quality patterns with good profile.

IT 153698-54-5

(acid decompn. inhibitor; in pos. working photoresist material contg. alkali-sol. resin or acid-decomposable resin for manuf. of color filter)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS C08L101-00; C09D201-00; G02B005-20; G03F007-004

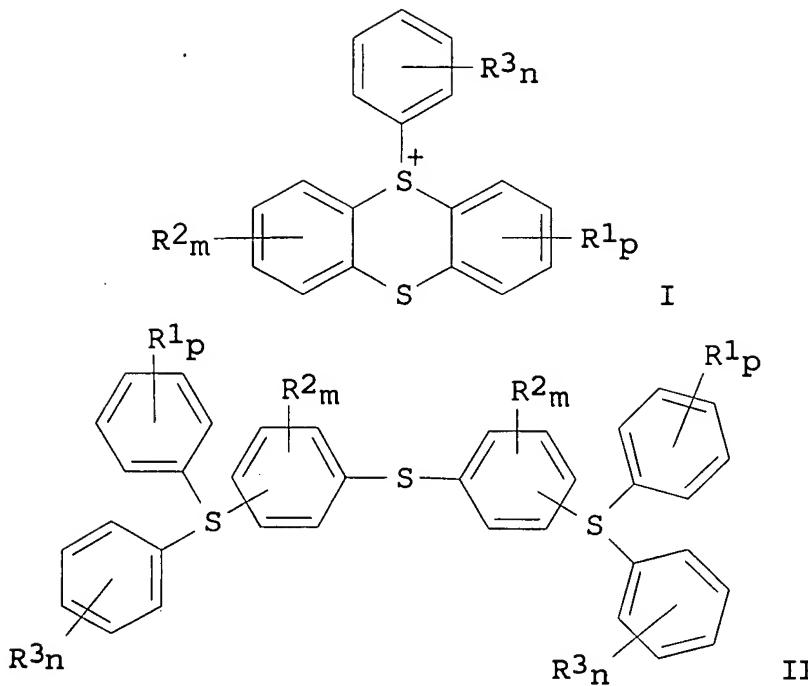
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)
ST pos working photosensitive compn color filter; acid decompn
inhibitor pos working photoresist; alkali soly acid
decomposable compn
IT Optical filters
Positive photoresists
(pos. working photoresist material contg. alkali-sol.
resin or acid-decomposable resin for manuf. of color filter)
IT 153698-54-5 153698-63-6 186493-32-3
(acid decompn. inhibitor; in pos. working photoresist
material contg. alkali-sol. resin or acid-decomposable resin for
manuf. of color filter)
IT 56530-39-3 66003-78-9 124737-97-9
(acid generator; in pos. working photoresist material
contg. alkali-sol. resin or acid-decomposable resin for manuf. of
color filter)
IT 101-80-4 484-47-9 1122-58-3
(in pos. working photoresist material contg.
alkali-sol. resin or acid-decomposable resin for manuf. of color
filter)
IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 142952-62-3
180337-31-9 196709-91-8 223473-73-2
(pos. working photoresist material contg. alkali-sol.
resin or acid-decomposable resin for manuf. of color filter)

L70 ANSWER 25 OF 65 HCA COPYRIGHT 2007 ACS on STN

129:296167 Positive photosensitive composition. Aoai, Toshiaki; Takita,
Satoshi; Uenishi, Kazuya (Fuji Photo Film Co., Ltd., Japan). Eur.
Pat. Appl. EP 869393 A1 19981007, 83 pp. DESIGNATED
STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW.
APPLICATION: EP 1998-105753 19980330. PRIORITY: JP 1997-80666
19970331; JP 1997-81075 19970331.

GI

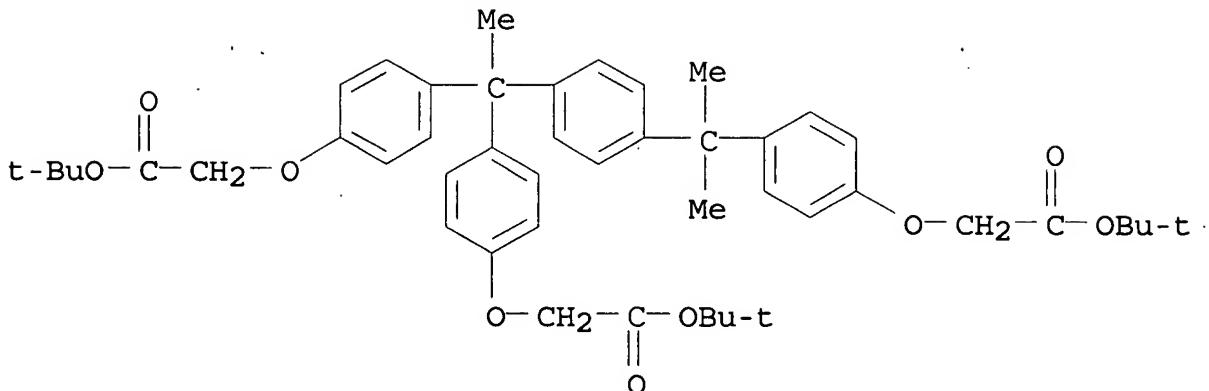


AB Provided is a pos. photosensitive compn. which has high photosensitivity, is capable of giving an excellent **resist** pattern, and changes little with time after exposure. The pos. photosensitive compn. comprises a resin having a group(s) capable of decompg. by the action of an acid to enhance soly. of the resin in an alk. developing soln. and a compd. represented by the formula I or II which is capable of generating a sulfonic acid upon irradn. with an actinic ray or a radiation wherein R₁₋₃ each represents a hydrogen atom, an alkyl group, a cycloalkyl group, an alkoxy group, a hydroxy group, a halogen atom, or a group represented by -SR₄, where R₄ represents an alkyl group or an aryl group; X- represents the specific anion of a benzenesulfonic, naphthalenesulfonic, or anthracenesulfonic acid; and p, m, and n represents an integer of 1 to 3.

IT 153698-54-5
(prepn. and use in prep. pos. **photoresists**)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



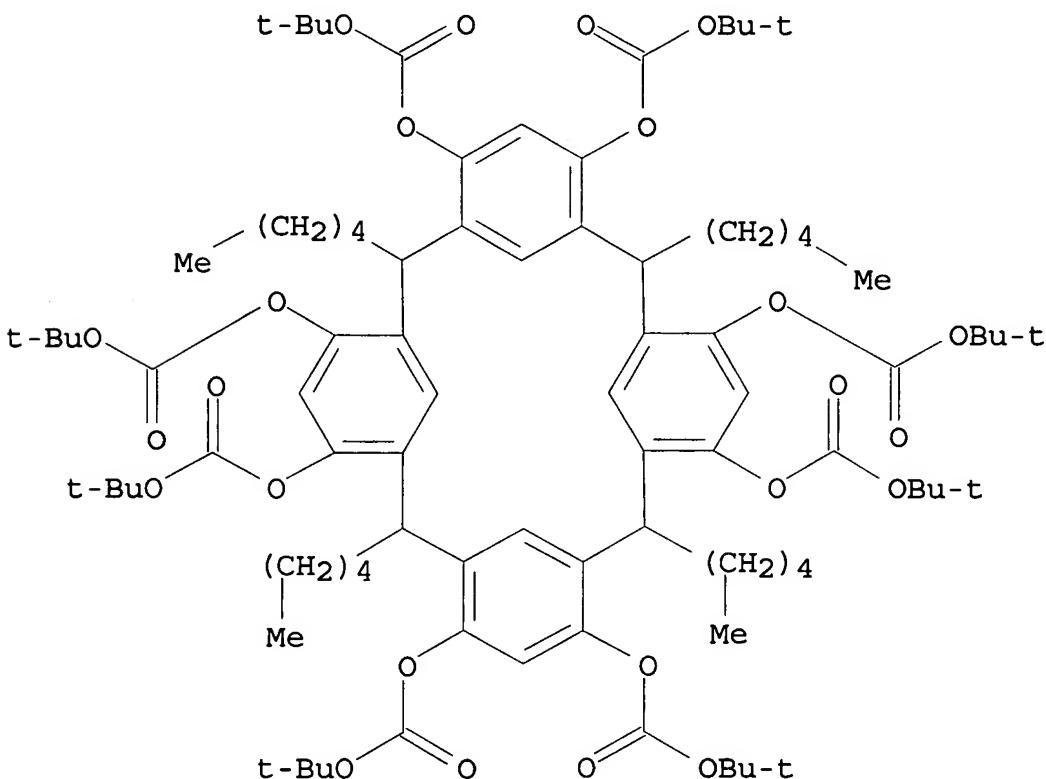
- IC ICM G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST pos photoresist sulfonic acid generating agent
 IT Positive photoresists
 (contg. sulfonic acid-generating agents)
 IT 214207-98-4 214207-99-5 214208-01-2 214208-03-4 214208-04-5
 214208-06-7 214208-07-8 214208-08-9 214208-09-0 214208-11-4
 214208-12-5 214208-14-7 214272-37-4 214272-39-6 214272-40-9
 (pos. photoresists contg.)
 IT 125325-82-8, p-(2-Tetrahydropyranloxy)styrene-p-hydroxystyrene copolymer 142952-62-3, tert-Butoxycarbonylmethyloxystyrene-p-hydroxystyrene copolymer 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 186769-12-0, p-(1-Butoxyethoxy)styrene-p-hydroxystyrene copolymer
 (pos. photoresists contg. sulfonic acid-generating agents and)
 IT 153698-54-5 153698-65-8 153698-70-5 153840-05-2
 159293-87-5 214207-97-3 214208-05-6 214208-10-3 214208-16-9
 214208-17-0 214272-35-2
 (prepn. and use in prep. pos. photoresists)
 L70 ANSWER 26 OF 65 HCA COPYRIGHT 2007 ACS on STN
 129:296072 A positive-working alkaline developable photoresist based on t-Boc-Calix[4]resorcinarene and a photoacid generator. Takeshi, Kazumasa; Nakayama, Ryuji; Ueda, Mitsuru (Department of Human Sensing and Functional Sensor Engineering, Graduate School of Engineering, Yamagata University, Yamagata, 992-8510, Japan). Chemistry Letters (9), 865-866 (English) 1998. CODEN: CMLTAG. ISSN: 0366-7022. Publisher: Chemical Society of Japan.
 AB A pos. working photoresist based on octa-O-tert-Bu carbonated C-hexylcalix[4]resorcinarene (t-BOC-h-C4) and p-nitrobenzyl-9, 10-dimethoxy-anthracene-2-sulfonate (NDS) as a

photoacid generator has been developed. The **photoresist** consisting of t-BOC-h-C4 (90 wt%) and NDS (10 wt%) showed a sensitivity of 24 mJ/cm² and a contrast of 8.1, when it was exposed to 365 nm light and postbaked at 90 °C for 2 min, followed by developing with a 1% aq. tetramethylammonium hydroxide (TMAH) soln. at room temp.

IT 214327-60-3
 (pos.-working alk. developable **photoresist** based on calix[4]resorcinarene and photoacid generator)

RN 214327-60-3 HCA

CN Carbonic acid, 2,8,14,20-tetrapentylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octakis(1,1-dimethylethyl)ester, stereoisomer (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos lithog alk developable **photoresist**; calix resorcinarene photoacid generator **photoresist**

IT Photolysis
 (in pos.-working alk. developable **photoresist** system based on calix[4]resorcinarene and photoacid generator)

IT Photoresists

(pos.-working alk. developable photoresist based on calix[4]resorcinarene and photoacid generator)

IT 121172-98-3, p-Nitrobenzyl-9, 10-dimethoxy-anthracene-2-sulfonate (photoacid generator; pos.-working alk. developable photoresist based on calix[4]resorcinarene and photoacid generator)

IT 214327-60-3

(pos.-working alk. developable photoresist based on calix[4]resorcinarene and photoacid generator)

IT 115-11-7, formation (nonpreparative) 124-38-9, Carbon dioxide, formation (nonpreparative)
(reaction mechanism in pos.-working alk. developable photoresist system based on calix[4]resorcinarene and photoacid generator)

IT 52212-90-5, 9,10-Dimethoxy-anthracene-2-sulfonic acid
(reaction mechanism in pos.-working alk. developable photoresist system based on calix[4]resorcinarene and photoacid generator)

L70 ANSWER 27 OF 65 HCA COPYRIGHT 2007 ACS on STN

129:101934 Radiation-sensitive resin composition. Suwa, Mitsuhiro; Iwasawa, Haruo; Kajita, Toru; Iwanaga, Shin-ichiro (Japan Synthetic Rubber Co., Ltd., Japan). Eur. Pat. Appl. EP 849634 A1 19980624, 35 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1997-121963 19971212. PRIORITY: JP 1996-353866 19961219.

GI For diagram(s), see printed CA Issue.

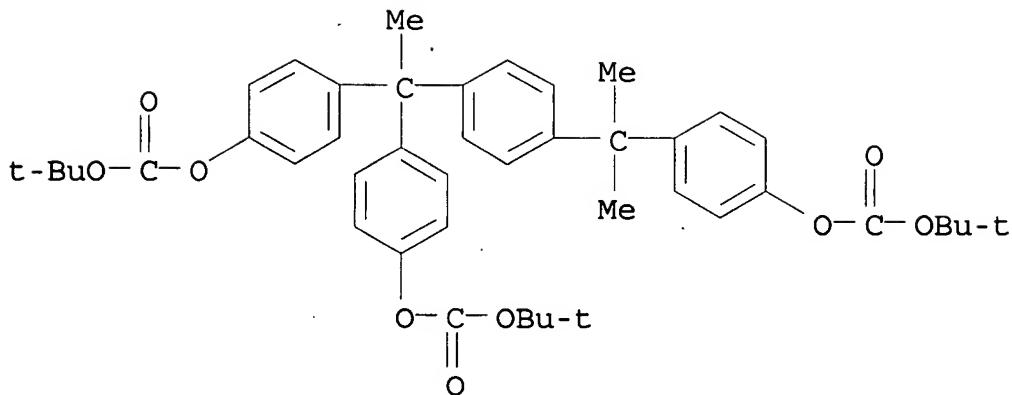
AB A pos.-tone or neg.-tone radiation-sensitive resin compn. comprises (A) a photoacid generator represented by the formula I or II wherein R₁, R₂, R₅, and R₆ are an alkyl group; R₃ and R₇ are a hydroxyl group or -OR₄ (wherein R₄ is an org. group); A₁₋ and A₂₋ indicate a monovalent anion; a and c denote an integer of 4-7; and b and d denote an integer of 0-7. The pos.-tone radiation-sensitive resin compn. further comprises (B1) an acid-cleavable group-contg. resin or (B2) an alkali-sol. resin and an alkali solv. control agent and the neg.-tone radiation-sensitive resin compn. further comprises (C) an alkali-sol. resin and (D) a crosslinking agent. The resin compn. is highly sensitive and exhibits superior resoln. and pattern forming performance.

IT 151533-21-0

(photoresist compns. contg. arom. photoacid generators and)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

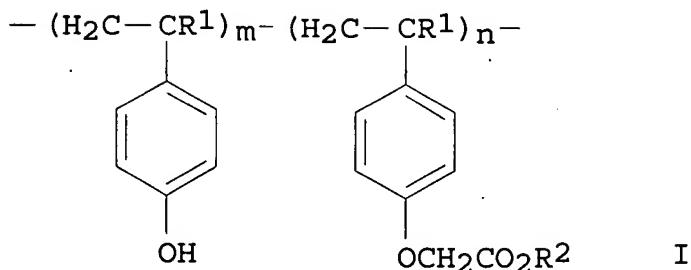


IC ICM G03F007-004
 ICS G03F007-038
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST photoresist pos arom photoacid generator
 IT Photoresists
 (contg. alkali-sol. resins, acid-cleavable resins, and arom. photoacid generators)
 IT Aminoplasts
 (photoresist compns. contg. alkali-sol. resins, arom. photoacid generators and)
 IT 196296-09-0 209482-13-3 209482-15-5 209482-17-7 209482-18-8
 (photoresist compns. contg. alkali-sol. resins and)
 IT 98-92-0, Nicotinic acid amide 102-82-9, Tributylamine 9011-05-6,
 MX290 17464-88-9, Cymel 1174
 (photoresist compns. contg. alkali-sol. resins, arom. photoacid generators and)
 IT 24979-70-2, Poly(p-hydroxystyrene) 59269-51-1D,
 Poly(hydroxystyrene), tert-butoxycarbonylated 117458-06-7
 151533-21-0 195154-95-1 209482-08-6, 2-Hydroxypropyl
 acrylate-tetrahydropyranyl acrylate-tricyclodecanyl acrylate
 copolymer 209482-09-7 209482-11-1 209545-11-9
 (photoresist compns. contg. arom. photoacid generators and)

L70 ANSWER 28 OF 65 HCA COPYRIGHT 2007 ACS on STN
 129:10629 Photoresist composition containing 4-phenylpyridine as additive. Niki, Hirokazu; Wakabayashi, Hiromitsu; Hayase, Rumiko; Oyasato, Naohiko; Onishi, Yasunobu; Sato, Kazuo; Chiba, Kenji; Hayashi, Takao (Kabushiki Kaisha Toshiba, Japan). U.S. US 5744281 A 19980428, 21 pp., Cont.-in-part of U.S. Ser. No. 781,512, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1997-848747 19970501. PRIORITY: JP 1993-228969 19930914; JP

1994-125006 19940607; US 1994-302319 19940908; US 1997-781512
19970109.

GI



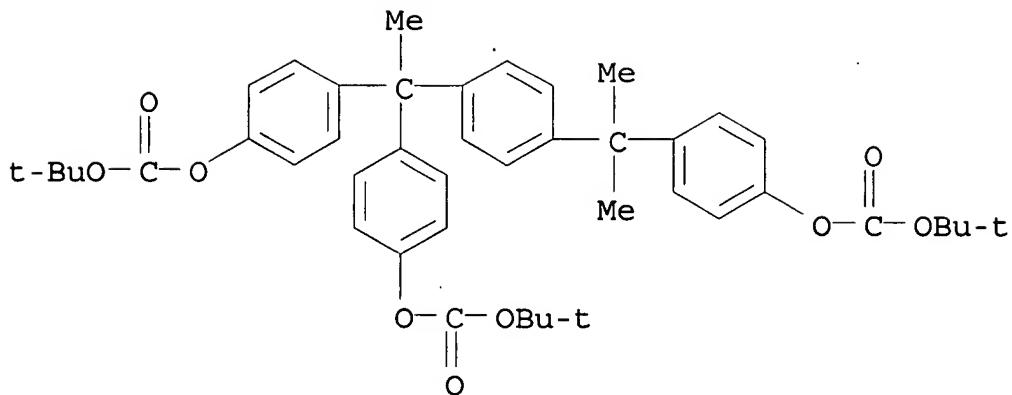
AB A **photoresist** compn. for forming a pattern, which comprises (a) a polymer represented by the formula I wherein R1 is a hydrogen atom or a Me group, R2 is a monovalent org. group, m is 0 or a pos. integer, n is a pos. integer, and m and n satisfying the inequality $0.03 \leq n/(m+n) \leq 1$, (b) a compd. capable of generating an acid when irradiated with light, and (c) 4-phenylpyridine, wherein the wt.-av. mol. wt. (Mw) and the no.-av. mol. wt. (Mn) of I satisfy the inequalities $4000 \leq M_w \leq 50,000$ and $1.10 \leq M_w/M_n \leq 2.50$ (M_w and M_n resp. represent value converted in styrene).

IT 151533-21-0

(pos. chem. amplified **photoresists** contg. hydroxystyrene copolymers, photoacid generators, nitrogen-contg. compds. and)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-0004

ICS G03F007-039

INCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photoresist chem amplified hydroxystyrene copolymer phenylpyridine

IT Positive photoresists

(chem. amplified; contg. hydroxystyrene copolymers, photoacid generators, and nitrogen-contg. compds.)

IT 66003-76-7 66003-78-9 121001-57-8 133789-86-3 167095-81-0
(pos. chem. amplified photoresists contg.

hydroxystyrene copolymers, nitrogen-contg. compds. and)

IT 80-08-0, 4,4'-Diaminodiphenylsulfone 98-92-0, 3-
Pyridinecarboxamide 101-77-9, 4,4'-Diaminodiphenylmethane
101-82-6, 2-Benzylpyridine 102-82-9, Tributylamine 108-75-8,
2,4,6-Trimethylpyridine 109-06-8, 2-Methylpyridine 110-86-1;
Pyridine, uses 122-39-4, Diphenylamine, uses 142-08-5,
2(1H)-Pyridinone 366-18-7, 2,2'-Bipyridine 553-26-4,
4,4'-Bipyridine 702-16-9, 5-Butyl-2-methylpyridine 3978-81-2,
4-tert-Butylpyridine 4916-57-8, 1,2-Bis(4-pyridyl)ethane
24980-54-9, Styrene-2-vinylpyridine copolymer 25232-41-1,
Poly(4-vinylpyridine) 36631-19-3, Triphenylimidazole 72762-00-6,
2-Hydroxypyridine 207395-43-5

(pos. chem. amplified photoresists contg.

hydroxystyrene copolymers, photoacid generators and)

IT 117458-06-7 151533-21-0

(pos. chem. amplified photoresists contg.

hydroxystyrene copolymers, photoacid generators, nitrogen-contg.
compds. and)IT 24979-70-2D, Poly(4-hydroxystyrene), tert-butoxycarbonylmethylated
(pos. chem. amplified photoresists contg. photoacid
generators, nitrogen-contg. compds. and)

L70 ANSWER 29 OF 65 HCA COPYRIGHT 2007 ACS on STN

128:328771 Positive-type photoresist compositions. Uenishi, Kazuya; Sakaguchi, Shinji; Fujinomori, Akira (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10097075 A 19980414 Heisei, 58 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-125686 19970515. PRIORITY: JP 1996-146180 19960607.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

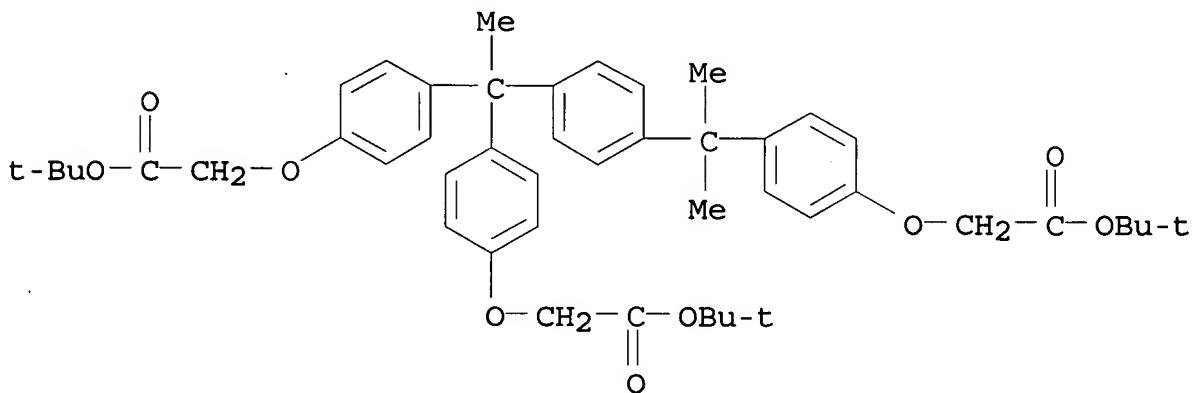
AB The title compns. comprise (A) CH₂:C(Rx)C₆H₄OH copolymer with CH₂:C(Rx)C₆H₄OC(Ra) (Rb)ORc and/or the copolymers contg. -C(Rd)(Re)ORfOC(Rg)(Rh)- crosslinking groups, (B) compds. generating acids upon irradn. of active light or radiation, and (C) I or II, wherein Rx = H, Me; Ra, Rb, Rd, Re, Rg, Rh = H, C₁₋₈ alkyl, C₃₋₆ cycloalkyl; Rc = C₁₋₈ alkyl, C₃₋₆ cycloalkyl, Q1; Rf = C₁₋₆ alkylene, C₃₋₆ cycloalkylene, Q2; Ri, Rj = H, C₁₋₆ alkyl, C₃₋₆ cycloalkylene; l + m = 100; m/(l + m) = 0.05-0.90; A = H, OH; E, G = Q3; R1-4 = H, XR13, halogen; R5, R6 = H, Me, Et, C₁₋₂ haloalkyl; a-f, k-n = 0-3; g-j = 0-2; p = 1-3; D = direct bond, CO, S, SO₂, CR₅R₆, -C(R5)(R6)C₆H₄C(R5)(R6)-; R8-12 = H, OH, CN, CO₂H, XR13; R13 = C₁₋₈ alkyl; X = direct bond, O, S, CO, O₂C.

IT 153698-54-5P

(pos.-type photoresist compns.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS G03F007-004; H01L021-027; H05K003-06; C08F012-22; C08L025-18
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 76
 ST photoresist pos type styrene deriv polymer
 IT Photoresists
 (pos.-type photoresist compns.)
 IT 19361-97-8 31796-20-0 41580-58-9 56530-39-3 66003-78-9
 142096-70-6 153698-46-5 153698-67-0 177786-97-9 199432-75-2
 206861-49-6 206861-50-9 206861-52-1 206861-53-2 206861-54-3
 (pos.-type photoresist compns.)
 IT 153698-54-5P 153698-63-6P 153698-65-8P 189103-11-5P
 189103-13-7P 189103-14-8P 189103-15-9P 206861-55-4P
 (pos.-type photoresist compns.)
 IT 107375-96-2P 110726-28-8P 110726-30-2P 110726-34-6P
 113629-59-7P 147079-30-9P 147079-31-0P 147079-32-1P
 147079-33-2P 147079-34-3P 147079-35-4P 147079-36-5P
 (pos.-type photoresist compns.)
 IT 24979-70-2, Poly(4-hydroxystyrene) 24979-74-6,
 p-Hydroxystyrene-styrene copolymer 87188-51-0 125325-82-8
 133685-94-6, o-Hydroxystyrene-p-hydroxystyrene copolymer
 142952-62-3, p-(tert-Butoxycarbonylmethoxy)styrene-p-hydroxystyrene
 copolymer 158593-28-3 171429-59-7, p-Acetoxyxystyrene-p-
 hydroxystyrene copolymer 196709-91-8 199432-81-0 206861-57-6
 206861-58-7 206861-60-1 206861-61-2 206861-62-3
 (pos.-type photoresist compns.)
 IT 50-00-0, Formaldehyde, reactions 80-05-7, Bisphenol A, reactions
 80-09-1, Bisphenol S 95-48-7, o-Cresol, reactions 108-39-4,
 reactions 108-95-2, Phenol, reactions 110-87-2,
 3,4-Dihydro-2H-pyran 131-55-5, 2,2',4,4'-Tetrahydroxybenzophenone
 576-26-1, 2,6-Dimethylphenol 611-99-4, 4,4'-Dihydroxybenzophenone
 623-05-2, 4-Hydroxymethylphenol 3957-22-0 4397-14-2,
 4-Hydroxymethyl-2,6-dimethylphenol 4466-18-6,
 $\alpha, \alpha', \alpha''$ -Tris(4-hydroxyphenyl)-1,3,5-
 triisopropylbenzene 5292-43-3, tert-Butyl bromoacetate
 5359-04-6, p-Isopropenylacetophenone 24424-99-5, Di-tert-butyl
 dicarbonate 76937-83-2, $\alpha, \alpha, \alpha', \alpha', \alpha'$
 ', α'' -Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene
 87771-42-4, Ethanone, 1-[3-(1-methylethenyl)phenyl]- 148452-55-5
 153698-47-6, Cumyl bromoacetate
 (pos.-type photoresist compns.)

L70 ANSWER 30 OF 65 HCA COPYRIGHT 2007 ACS on STN
 127:285943 Positive-working photoresist composition using
 specific alkali-soluble resin. Tan, Shiro; Aoso, Toshiaki;
 Yamanaka, Hitoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai

Tokkyo Koho JP 09236920 A 19970909 Heisei, 47 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-41689 19960228.

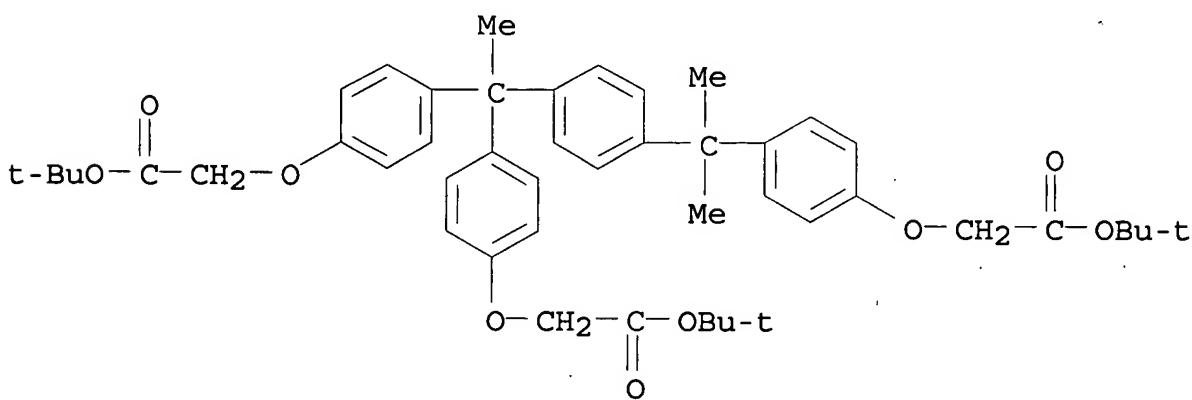
AB The title compn. contains (a) a resin with wt. av. mol. wt. (Mw) 4000-80,000 and mol. wt. distribution Mw/Mn = 1.6-4.0 (Mn = no. av. mol. wt.) which has ≥ 1 acid-decomposable group selected from acetal and silyl ether groups and of which the solv. in alk. developing solns. increases by the action of acids, (b) a compd. generating an acid upon irradn., (c) a solvent, and (d) an optional non-polymer-type dissoln. inhibitor which has ≥ 1 selected from tert-alkyl ester and tert-alkyl carbonate groups and of which the solv. in alk. aq. solns. increases by the action of acids. The compn. shows high sensitivity and storage stability, and provides high resoln. patterns with good profile and the sensitivity and the profile. Thus, p-hydroxystyrene-styrene copolymer of which 20% of the OH groups were tert-butoxy-1-ethylated, p-Me₂CC₆H₄(SO₂)₂Ph, and an org. basic compd. were dissolved in propylene glycol monoethyl ether acetate to give a **resist** soln.

IT 153698-54-5P

(dissoln. inhibitor; **photoresist** compn. contg. alkali sol. polymer with acetal or silyl ether group)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[{[1-[4-[1-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS G03F007-004; G03F007-075; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 37

ST **photoresist** compn polyhydroxystyrene silyl ether deriv;
 acetal deriv polyhydroxystyrene **photoresist**; dissoln
 inhibitor polyhydroxy compd ester

IT Positive photoresists

(photoresist compn. contg. alkali sol. polymer with acetal or silyl ether group)

IT 153698-54-5P 153698-63-6P

(dissoln. inhibitor; photoresist compn. contg. alkali sol. polymer with acetal or silyl ether group)

IT 75-77-4DP, Trimethylsilyl chloride, ether with hydroxystyrene polymer 926-02-3DP, tert-Butyl vinyl ether, ether with hydroxystyrene polymer 24979-70-2DP, Poly(p-hydroxystyrene), ethers 24979-74-6DP, p-Hydroxystyrene-styrene copolymer, ethers (photoresist compn. contg. alkali sol. polymer with acetal or silyl ether group)

L70 ANSWER 31 OF 65 HCA COPYRIGHT 2007 ACS on STN

126:270251 Design of high performance chemically amplified resist. Niinomi, Takaaki; Tomiyasu, Hiroshi; Kameyama, Yasuhiro; Tsukamoto, Michinori; Tanaka, Yuki; Fujita, Jun; Shimomura, Satoshi; Ochiai, Tameichi (Yokohama Research Center, Mitsubishi Chemical Corporation, Yokohama, 227, Japan). Proceedings of SPIE-The International Society for Optical Engineering, 2724(Advances in Resist Technology and Processing XIII), 174-185 (English) 1996. CODEN: PSISDG. ISSN: 0277-786X.

Publisher: SPIE-The International Society for Optical Engineering.

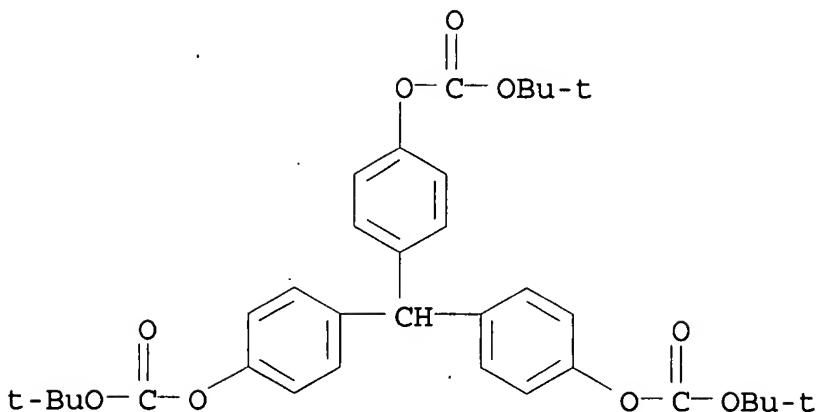
AB The lithog. performance of chem. amplified pos. resists have nearly reached at the level of application to quarter-micron level with regard to their resoln. and sensitivity. However, it is hard to say that the problem of Post Exposure Delay (PED), which contains formation of "T-top" shape or "foot" profiles, has completely solved. We studied structure effect of both a dissoln. inhibitor and a protecting group on the problem. It was shown that a resist film having a dissoln. inhibitor derived from trisphenol loses less amt. of acid by evapn. compared with one having bisphenol type dissoln. inhibitor. With regard to easiness of cleavage of the protecting group, IR measurement has confirmed that the dissociation of t-BOC occurs during PEB whereas that of THP occurs during exposure. MO calcn. showed that acetal group can be protonated easier than carbonate group and that both of them will have no barrier to cleave after protonation. Based on the above findings, we have obtained the high performance resist by applying these findings.

IT 153041-55-5

(as dissoln. inhibitor losing less amt. of acid by evapn. for high performance chem. amplified resist)

RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST design high performance chem amplified **resist**; lithog **photoresist** trisphenol dissoln inhibitor
- IT **Resists**
(design of high performance chem. amplified **resist**)
- IT Lithography
(high performance chem. amplified **resist** design for)
- IT 117458-06-7
(as dissocn. prohibiter used in studying acid losing amt. for high performance chem. amplified **resist**)
- IT 153041-55-5
(as dissoln. inhibitor losing less amt. of acid by evapn. for high performance chem. amplified **resist**)
- IT 110-87-2D, reaction product with polyvinyl phenol 24424-99-5D, Di-tert-butyl-di-carbonate, reaction product with polyvinyl phenol 59269-51-1D, Polyvinyl phenol, reaction product with di-tert-butyl-di-carbonate or 3,4-dihydropyran
(used in studying acid losing amt. for high performance chem. amplified **resist**)
- IT 106-44-5D, p-Cresol, tetrahydropyranyl, or ethoxyethyl-, or di-tert-butyl-di-carbonate-substituted
(used in studying protonation easiness for high performance chem. amplified **resist**)

L70 ANSWER 32 OF 65 HCA COPYRIGHT 2007 ACS on STN

126:150507 Chemically amplified positive **resist** composition.

Yamanaka, Tsukasa; Aoai, Toshiaki; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 747768 A2 19961211, 81 pp. DESIGNATED STATES: R: BE, DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1996-109089 19960605. PRIORITY: JP 1995-138295 19950605; JP 1996-66665 19960322.

AB Disclosed is a chem. amplified pos. **resist** compn. which

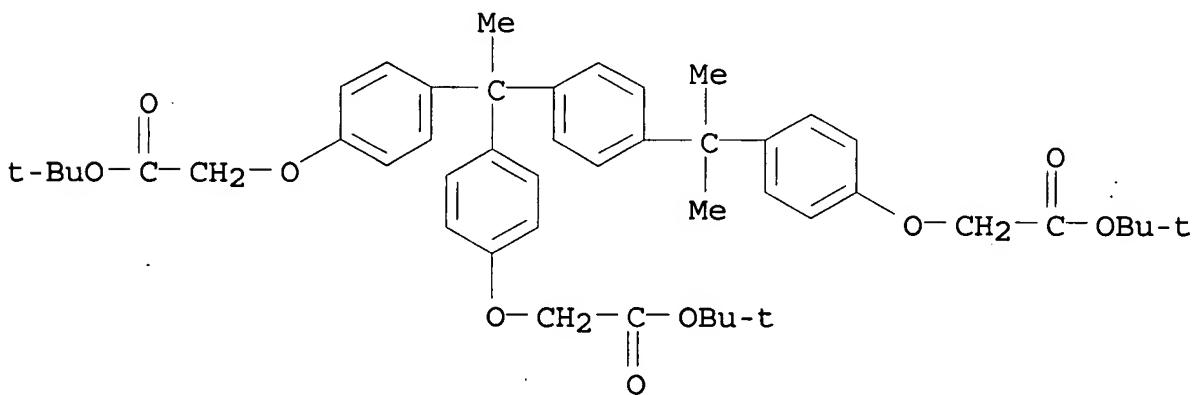
comprises (A) a compd. which contains at least one group selected from tert-alkyl ester groups and tert-alkyl carbonate groups and is capable of increasing solv. of the compd. in an alkali aq. soln. by the action of an acid, (B) a compd. which contains at least one group selected from acetal groups and silyl ether groups and is capable of increasing solv. of the compd. in an alkali aq. soln. by the action of an acid, (C) a compd. which is capable of generating an acid by irradn. with an active ray or radiation, and (D) an org. basic compd. The **resist** compn. has high resolving power and forms a satisfactory pattern free from undergoing sensitivity decrease, T-top formation, and change in line width which are caused by post exposure bake.

IT 153698-54-5

(resin dissoln. inhibitor for chem. amplified pos.
photoresist compns.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'--[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST chem amplification pos **resist** acetal compd; org base chem amplification pos **resist**IT Positive **photoresists**

(chem. amplified; contg. compds. contg. tert-alkyl and acetal groups and org. bases)

IT 24979-70-2, p-Hydroxystyrene, homopolymer 24979-74-6,
p-Hydroxystyrene; styrene copolymer

(alkali-sol. binder for chem. amplified pos. **photoresist** compns.)

IT 101-80-4 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3,

4-Dimethylaminopyridine

(chem. amplified pos. photoresist compns. contg.)

- IT 19361-97-8 66003-78-9, Triphenylsulfonium triflate 124247-04-7
 124737-97-9 168697-66-3
 (photoacid generator for chem. amplified pos. photoresist compns.)
- IT 142952-62-3, p-Hydroxystyrene; p-(tert-butoxy-carbonylmethoxy)styrene copolymer 153698-54-5
 153698-63-6 180337-31-9 181215-93-0, p-Hydroxystyrene; p-(tert-butoxy-1-methylethoxy)styrene copolymer 186493-32-3
 (resin dissoln. inhibitor for chem. amplified pos. photoresist compns.)

L70 ANSWER 33 OF 65 HCA COPYRIGHT 2007 ACS on STN

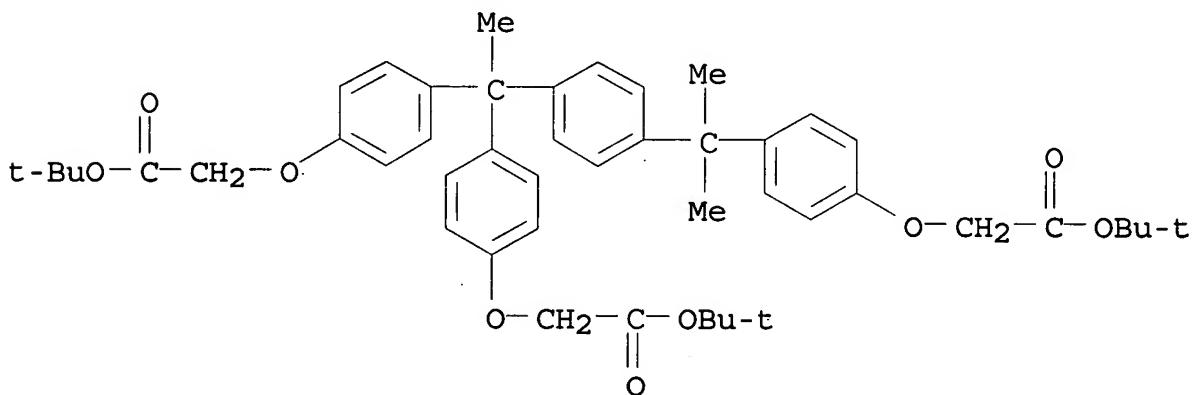
125:342920 Radiation-sensitive resin composition with wide defocus latitude. Sakaguchi, Shinji; Kato, Kunimasa (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08227160 A 19960903 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-32571 19950221.

AB The compn. contg. a water-insol. alkali-sol. resin and a radiation-sensitive compd. shows a R-M characteristic curve [R ($\mu\text{m}/\text{s}$) = dissoln. rate of the compn. upon development with an aq. soln. of Me₄NOH (2.38 wt.%) at 23° and M = relative concn. of the remaining radiation-sensitive compd.] which satisfies dM value ≤ 0.1 where dM is the difference between M when R = 0.02 $\mu\text{m}/\text{s}$ and M when R = 0.002 $\mu\text{m}/\text{s}$. The compn. shows high resoln. and sensitivity and have wide defocus latitude.

IT 153698-54-5
 (radiation-sensitive resin compn. with wide defocus latitude)

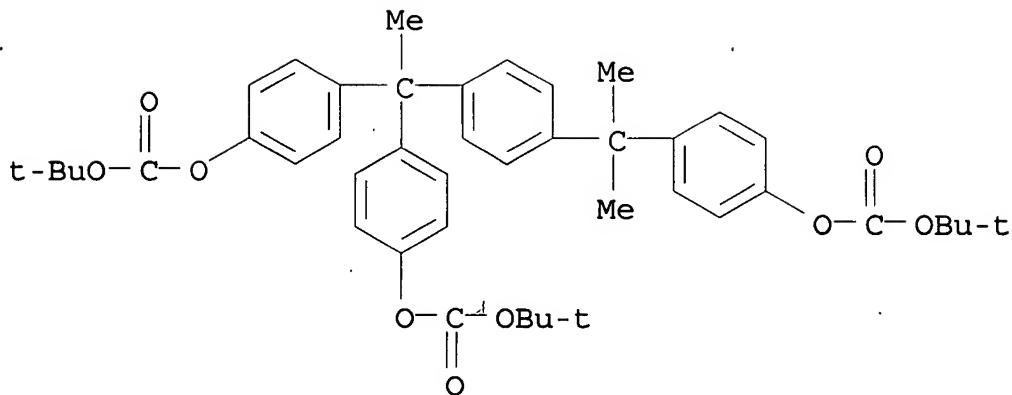
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-36
ICS G03F007-022
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST radiation sensitive resin compn; **resist** radiation sensitive
IT **Resists**
 (radiation-sensitive, radiation-sensitive resin compn. with wide defocus latitude)
IT 2395-97-3 110726-28-8 111928-10-0 **153698-54-5**
153698-63-6 158859-36-0 183905-26-2 183905-27-3
 (radiation-sensitive resin compn. with wide defocus latitude)

L70 ANSWER 34 OF 65 HCA COPYRIGHT 2007 ACS on STN
125:342905 Positive- and negative-working radiation-sensitive resin compositions. Oota, Yoshihisa; Natsui, Tooru; Makita, Minoru; Yamachika, Mikio (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08211598 A **19960820** Heisei, 21 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-39420 19950206.
AB The title pos.-working resin compns. contain (A) a thiosulfonate compd. $XS(:O)2SY$ or $X(:O)2SZSS(:O)2Y$ [X, Y = (substituted) monovalent non-cyclic hydrocarbon, cycloalkyl, aryl, aralkyl, hetero atom-contg. other monovalent group; Z = $(CH_2)_n$ ($n = 0$ to 6), $(CH_2)_mC(:O)(CH_2)_m$, $(CH_2)_mC(:N_2)(CH_2)_m$ ($m = 0$ to 2)] and either (B) an acid-dissocg. group-protected resin insol. or slightly sol. in alkali, which becomes alkali-sol. when the group is dissocd., or (C) an alkali-sol. resin and alkali-soly.-controlling agent. The neg.-working compns. contain the thiosulfonate compd., an alkali-sol.resin, and a compd. which can crosslink the resin in the presence of an acid. The compns. show good processability in post exposure time delay and provide high resoln. patterns with high sensitivity and good profile. Thus, a pos.-working **resist** comprised S-phenylbenzene thiosulfonate and poly(hydroxystyrene) protected partially with tert-butoxycarbonyl group.
IT **151533-21-0**
 (alkali-soly.-controlling agent; radiation-sensitive **resist** compn. contg. thiosulfonate)
RN 151533-21-0 HCA
CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylpropyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37

ST resist radiation sensitive thiosulfonate

IT Resists

(radiation-sensitive, radiation-sensitive resist compn. contg. thiosulfonate)

IT 9011-05-6

(MX 290, crosslinking agent; radiation-sensitive resist compn. contg. thiosulfonate)

IT 117458-06-7 151533-21-0

(alkali-soly.-controlling agent; radiation-sensitive resist compn. contg. thiosulfonate)

IT 17464-88-9, Cymel 1174

(crosslinking agent; radiation-sensitive resist compn. contg. thiosulfonate)

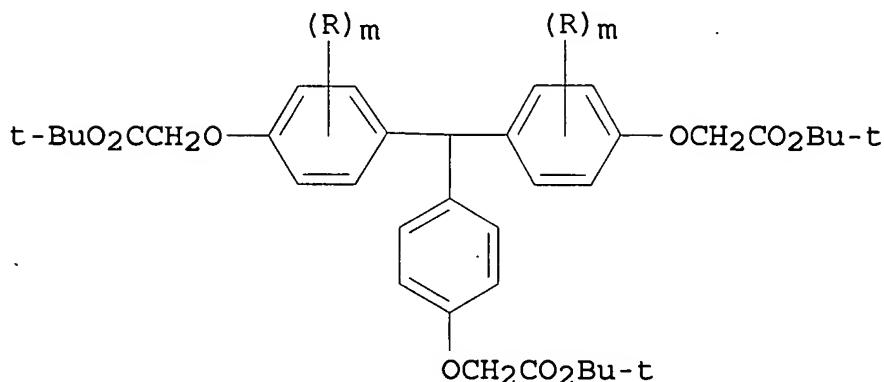
IT 1212-08-4, S-Phenylbenzene thiosulfonate 2225-23-2 2949-92-0, S-Methyl-methanethiosulfonate 3866-79-3 4837-39-2 16601-02-8
(radiation-sensitive resist compn. contg. thiosulfonate)IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 59269-51-1D,
Polyhydroxystyrene, butoxycarbonylmethyl ethers 155214-68-9
183451-91-4
(radiation-sensitive resist compn. contg. thiosulfonate)

L70 ANSWER 35 OF 65 HCA COPYRIGHT 2007 ACS on STN

125:261267 Bis(4-tert-butoxycarbonylmethoxy-2,5-dimethylphenyl)methyl-4-tert-butoxycarbonylmethoxybenzene derivative for dissolution inhibitor of three-component resist. Watanabe, Atsushi; Ishihara, Toshinobu; Yagihashi, Fujio (Shinetsu Chemical Industry

Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 08193054 A
19960730 Heisei, 4 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1995-20955 19950113.

GI



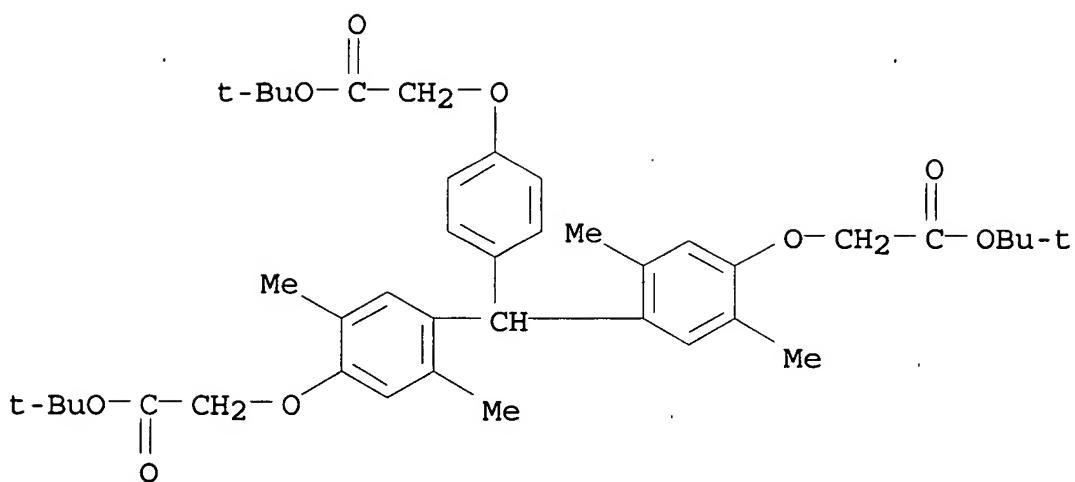
AB The deriv. is represented by I ($R = \text{alkyl}$; $m = \text{an integer of } 0-4$).
 The deriv. shows good solv. toward macromol. compds. in a
 pos.-working three-component **resist**, and is useful for
 dissoln. inhibitor of the **resist**.

IT **182252-62-6P**

(prepn. of di-Ph methylbenzene deriv. for dissoln. inhibitor of
 three-component pos.-working **resist**)

RN 182252-62-6 HCA

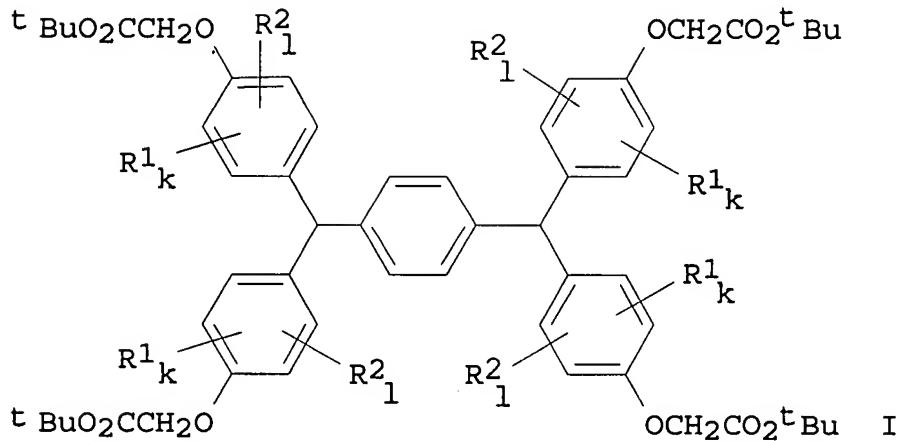
CN Acetic acid, 2,2'--[[4-[2-(1,1-dimethylethoxy)-2-
 oxoethoxy]phenyl]methylene]bis[(2,5-dimethyl-4,1-phenylene)oxy]]bis-
 , bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM C07C069-712
 ICS G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25
 ST resist dissoln inhibitor diphenyl methylbenzene; pos working resist dissoln inhibitor
 IT Resist
 (di-Ph methylbenzene deriv. for dissoln. inhibitor of three-component pos.-working resist)
 IT 107-59-5, tert-Butyl chloroacetate 168766-36-7
 (in prepn. of di-Ph methylbenzene deriv. for dissoln. inhibitor of three-component pos.-working resist)
 IT 182252-62-6P
 (prepn. of di-Ph methylbenzene deriv. for dissoln. inhibitor of three-component pos.-working resist)

L70 ANSWER 36 OF 65 HCA COPYRIGHT 2007 ACS on STN
 125:261265 1,4-Bis[bis(4-tert-butoxycarbonylmethoxyphenyl)methyl]benzene and its derivative for dissolution inhibitor of resist composition. Watanabe, Atsushi; Ishihara, Toshinobu; Yagihashi, Fujio (Shinetsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 08193052 A 19960730 Heisei, 4 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-20953 19950113.

GI



AB The 1,4-bis[bis(4-tert-butoxycarbonylmethoxyphenyl)methyl]benzene and its deriv. are I (R1-2 = alkyl; k = an integer of 0-4, l = an integer of 0-2, k + l ≤ 4). The claimed compd. shows good solv. toward macromol. compds. in pos.-type **resist**, and is useful for dissoln. inhibitor.

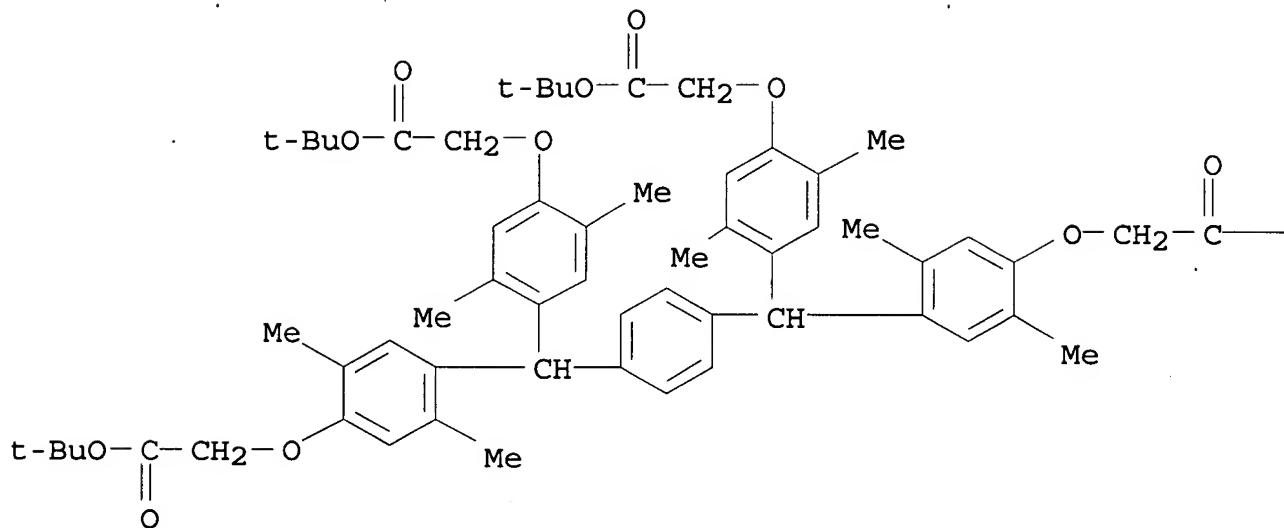
IT 177983-92-5P 182216-32-6P 182216-34-8P

(prepn. of 1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. **resist**)

RN 177983-92-5 HCA

CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis[(2,5-dimethyl-4,1-phenyleneoxy]]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

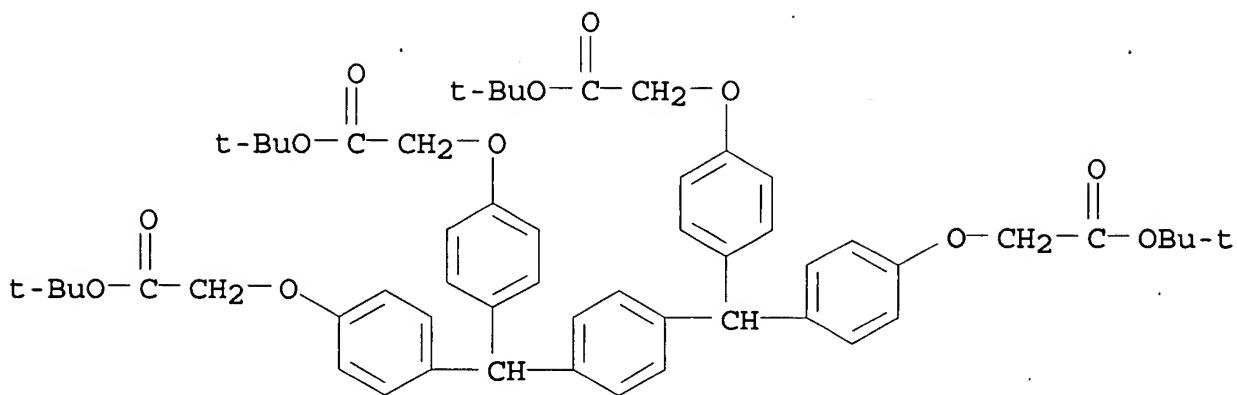


PAGE 1-B

 ---OBu-t

RN 182216-32-6 HCA

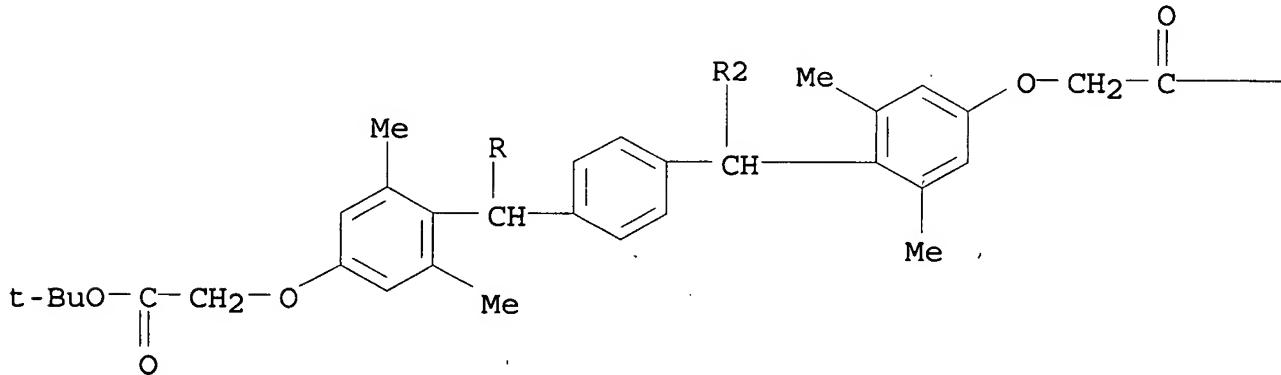
CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis(4,1-phenyleneoxy)]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI)
(CA INDEX NAME)



RN 182216-34-8 HCA

CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis[(3,5-dimethyl-4,1-phenylene)oxy]]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

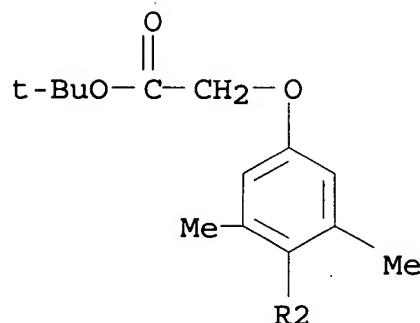
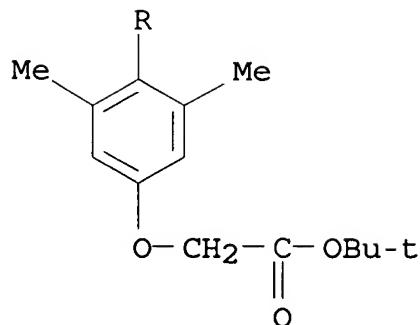
PAGE 1-A



—OBu-t

PAGE 1-B

PAGE 2-A

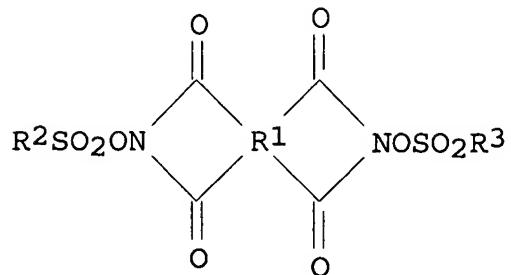


- IC ICM C07C069-712
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 25
- ST resist three component dissoln inhibitor; pos
resist benzene deriv dissoln inhibitor
- IT Resist
(1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. resist)
- IT 107-59-5, tert-Butyl chloroacetate 18066-45-0 51866-62-7
182216-24-6
(in prepn. of 1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. resist)
- IT 177983-92-5P 182216-32-6P 182216-34-8P
(prepn. of 1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. resist)

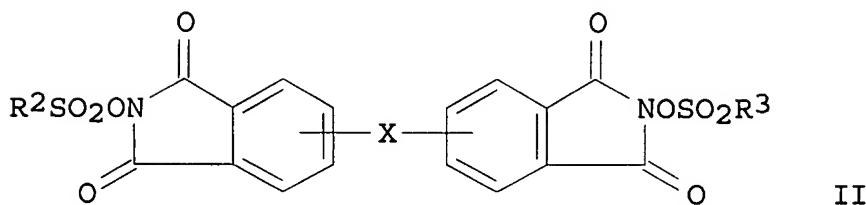
L70 ANSWER 37 OF 65 HCA COPYRIGHT 2007 ACS on STN
125:261258 Radiation-sensitive resin compositions useful as positive- and negative-working resists. Suzuki, Masamitsu; Natsume, Norihiro; Kobayashi, Yasutaka; Isamoto, Yoshitsugu (Japan Synthetic

Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08184965 A
19960716 Heisei, 17 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1994-337093 19941227.

GI



I



II

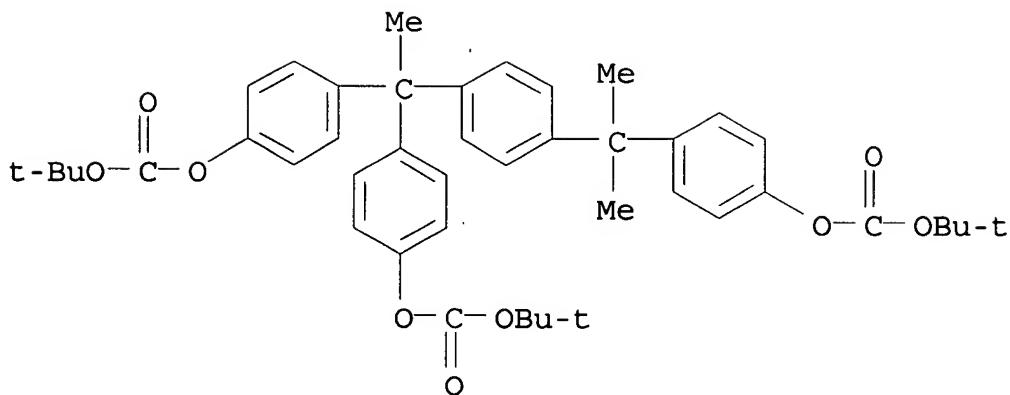
AB The title resin compns. contain (a) ≥ 1 bisimide compd. selected from I and II [R1 = tetravalent hydrocarbon residue; R2, R3 = aliph., alicyclic, or arom. monovalent org. group; X = CO, CO₂YOCO; Y = (N-sulfonyloxydicarboxyimido-contg.) alkylene] and (b) (1) an acid-dissocg. group-protected resin insol. or slightly sol. in alkali which becomes alkali-sol. when the group is dissocd. or (2) an alkali-sol. resin and a compd. which has a property of controlling the alkali-soly. of the resin and is decompd. in presence of acids to decrease or lose the function of controlling the alkali-soly. or to show a function of promoting the soly. The compns. may contain ≥ 1 of the bisimide compds., the alkali-sol. resin and a compd. able to crosslink the resin in presence of acids. The compns. show high soly. and photosensitivity and provide high resoln. patterns with good profile independent of post-baking conditions.

IT 151533-21-0P

(soly.-regulator; radiation-sensitive resist compns.
 contg. sulfonyloxy-carboxyimide acid-generator)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylpropyl]phenylethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



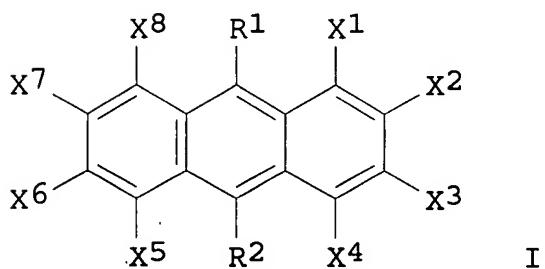
- IC ICM G03F007-038
 ICS G03F007-004; G03F007-039; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 37
 ST photoresist sulfonyloxy carboxy imide acid generator;
 alkali solv. photoresist
 IT Resists
 (radiation-sensitive, radiation-sensitive resist
 compns. contg. sulfonyloxy-carboxyimide acid-generator)
 IT 182003-14-1P 182003-18-5P 182003-21-0P 182003-23-2P
 182003-26-5P
 (acid-generator; radiation-sensitive resist compns.
 contg. sulfonyloxy-carboxyimide acid-generator)
 IT 121-44-8, reactions 24424-99-5, Di-tert-butyl dicarbonate
 110726-28-8
 (in prepn. of solv.-regulator for radiation-sensitive
 resist compns.)
 IT 89-32-7 98-59-9, p-Toluenesulfonyl chloride 358-23-6,
 Trifluoromethanesulfonic acid anhydride 594-44-5, Ethanesulfonyl
 chloride 1732-96-3 2386-60-9, Butanesulfonyl chloride
 4552-50-5 5470-11-1, Hydroxylammonium chloride 6053-46-9
 13912-65-7 182003-34-5
 (in prepn. of sulfonyloxy-carboxyimide acid-generator for
 photoresist)
 IT 159296-87-4P, tert-Butyl acrylate-p-vinylphenol copolymer
 168274-87-1P 182209-88-7P 182209-89-8P
 (radiation-sensitive resist compns. contg.
 sulfonyloxy-carboxyimide acid-generator)
 IT 151533-21-0P
 (solv.-regulator; radiation-sensitive resist compns.
 contg. sulfonyloxy-carboxyimide acid-generator)

L70 ANSWER 38 OF 65 HCA COPYRIGHT 2007 ACS on STN

125:261247 Chemically amplified, radiation-sensitive resin composition.

Yamachika, Mikio; Kusama, Masatoshi; Kobayashi, Yasutaka; Tsuji, Akira (Japan Synthetic Rubber Co., Ltd., Japan). Eur. Pat. Appl. EP 726500 A1 19960814, 30 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1996-300926 19960212. PRIORITY: JP 1995-46672 19950213.

GI



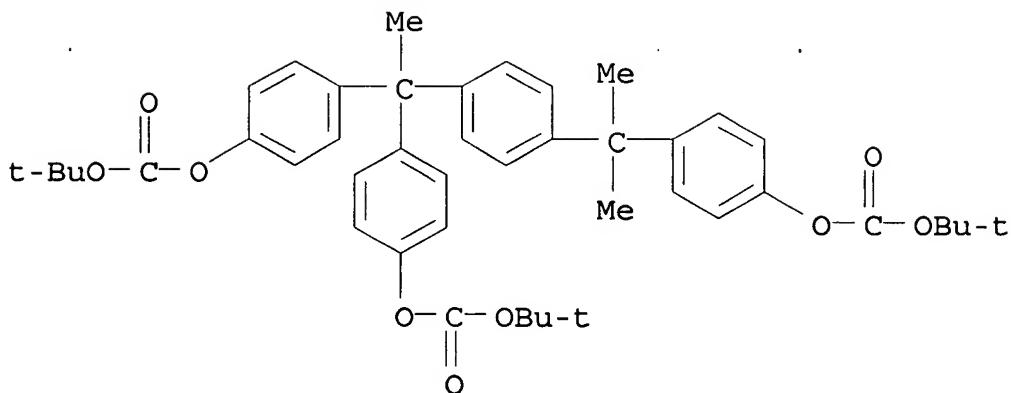
AB A chem. amplified, radiation-sensitive resin compn. comprises a radiation-sensitive acid generator which generates an acid upon irradn. with a radiation and in which the chem. change due to the catalytic action of the acid changes the solv. of the irradiated portion in a developer to form a pattern, characterized by comprising an anthracene deriv. of the formula I (X1-8 = H, halogen, alkyl, alkoxy, aryl, or nitro; R1, R2 = H, halogen, alkyl, alkoxy, aryl, nitro, $(CH_2)_nOR_3$, $(CH_2)_nCO_2R_3$ where R3 = H, alkyl, or aryl; n = an integer of 0-3), such as anthracene-9-methanol and 9-ethoxycarbonylanthracene.

IT 151533-21-0P

(prepn. and use in radiation-sensitive resin compns.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



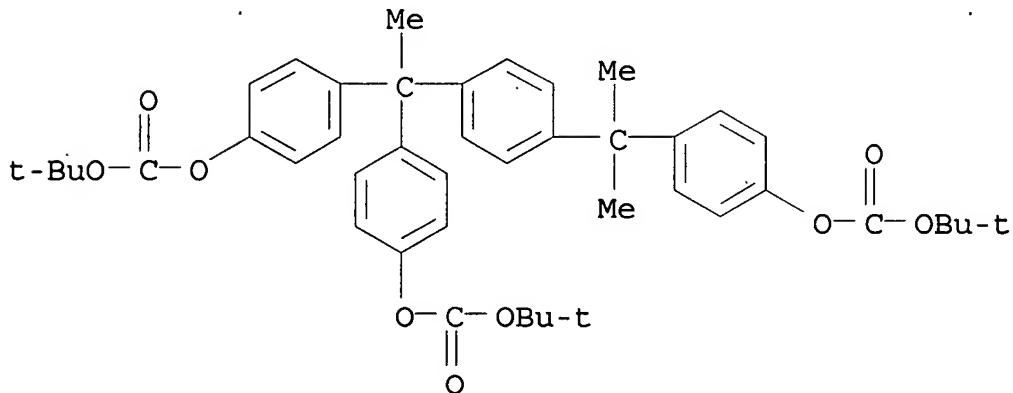
- IC ICM G03F007-09
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT **Resists**
 (radiation-sensitive, chem. amplified; contg. anthracene derivs.)
 IT 24979-70-2P, Poly(p-hydroxystyrene) 87261-04-9P,
 Poly(p-vinylphenol)-tert-butoxycarbonate 117458-06-7P
151533-21-0P 153928-42-8P, Methyl methacrylate;
 tetrahydropyranyl acrylate copolymer 159296-87-4P, tert-Butyl acrylate- p-vinylphenol copolymer 168274-87-1P, tert-Butyl acrylate- p-isopropenylphenol copolymer
 (prepn. and use in radiation-sensitive resin compns.)

L70 ANSWER 39 OF 65 HCA COPYRIGHT 2007 ACS on STN
 125:234432 Chemical amplification-type **resist** solution with improved coatability. Oota, Toshuki; Tanabe, Takayoshi; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08179500 A 19960712 Heisei, 16 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 1994-335607 19941221.
 AB The title **resist** soln. contains propylene glycol alkyl ether propionate as a solvent. The soln. can be spin-coated on large-sized substrates to form an uniform **resist** film showing high photosensitivity and resoln. and is useful for manuf. of elec. circuits. Thus, poly(hydroxystyrene) protected partially with tert-butoxycarbonyl group and $\text{Ph}_3\text{S}^+\text{CF}_3\text{SO}_3^-$ were dissolved in propylene glycol monomethyl ether propionate to give a **resist** soln.

IT **151533-21-0P**
 (dissoln. inhibitor; chem. amplification-type **resist** compn. contg. propylene glycol alkyl ether propionate as solvent)
 RN 151533-21-0 HCA
 CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene

bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST chem amplification **resist** soln; propylene glycol alkyl ether propionate solvent
 IT **Resists**
 (chem. amplification-type **resist** compn. contg.
 propylene glycol alkyl ether propionate as solvent)
 IT 98516-33-7, Propylene glycol monomethyl ether propionate
 181259-38-1
 (chem. amplification-type **resist** compn. contg.
 propylene glycol alkyl ether propionate as solvent)
 IT 59269-51-1DP, Polyhydroxystyrene, ethers with Bu bromoacetate
 84775-35-9P 95418-59-0P, p-tert-Butoxystyrene-styrene copolymer
 170636-47-2P, tert-Butyl acrylate-styrene-vinylphenol copolymer
 175284-06-7P, tert-Butyl acrylate-vinylphenol copolymer
 (chem. amplification-type **resist** compn. contg.
 propylene glycol alkyl ether propionate as solvent)
 IT 3089-11-0
 (crosslinking agent; chem. amplification-type **resist** compn. contg. propylene glycol alkyl ether propionate as solvent)
 IT 117458-06-7P 151533-21-0P
 (dissoln. inhibitor; chem. amplification-type **resist** compn. contg. propylene glycol alkyl ether propionate as solvent)

L70 ANSWER 40 OF 65 HCA COPYRIGHT 2007 ACS on STN

125:45127 Positive chemically amplified **resist** composition and method for producing compounds used therein. Aoai, Toshiaki; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 709736 A1 19960501, 78 pp. DESIGNATED STATES: R: BE, DE. (English). CODEN: EPXXDW. APPLICATION: EP 1995-116815

19951025. PRIORITY: JP 1994-262790 19941026.

AB A pos. chem. amplified **resist** compn. is disclosed, comprising (a) a compd. which generates an acid upon irradn. with active light or radiant ray, (b) a resin insol. in water but sol. in an aq. alkali soln., and (c) a low-mol-wt. acid-decomposable dissoln. inhibitor having a mol. wt. of 3000 or less and contg. an acid-decomposable alkyl ester group represented by the formula $-(CR_1R_2)_nCO_2CR_3R_4R_5$ ($R_1, R_2 = H$, alkyl, or aryl; $R_3, R_4, R_5 = H$, alkyl, cycloalkyl, alkoxy, alkenyl, aralkyl, or aryl, provided that two of R_3, R_4 , and R_5 may be combined to form a ring; $n =$ an integer of 1-10), which increases its solv. in an alkali developer by the action of an acid, and having a sodium content and a potassium content each of 30 ppb or less. Further disclosed are methods for producing the compds. (c).

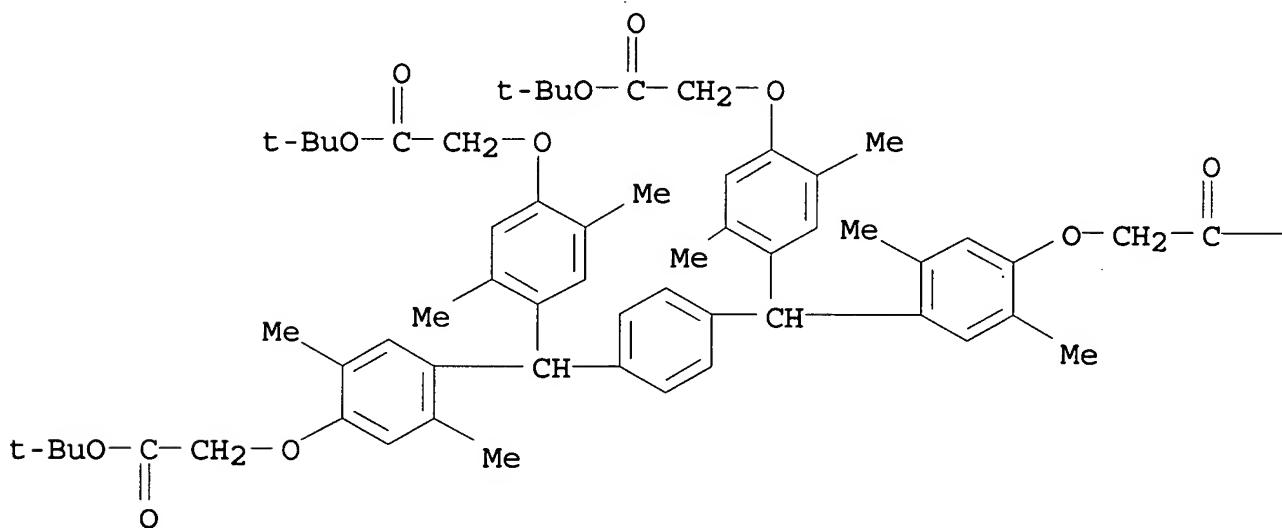
IT 177983-92-5P

(prepn. and use as acid-decomposable dissoln. inhibitor for pos **photoresist**)

RN 177983-92-5 HCA

CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis[(2,5-dimethyl-4,1-phenyleneoxy)]]]tetrakis-, tetrakis(1,1-dimethylethyl)ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—OBu-t

IC ICM G03F007-004
ICS C08F008-02
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos chem amplified **photoresist** compn; acid decomposable dissoln inhibitor pos **photoresist**
IT **Resists**
 (photo-, pos.-working, contg. alkali-sol. resins, photosensitive acid generators, and acid-decomposable dissoln. inhibitors)
IT 66003-78-9 124737-97-9 142096-70-6 153698-46-5 153698-67-0
 176109-33-4 177786-96-8 177786-97-9 177786-98-0
 (photosensitive acid generator for pos. **photoresists**)
IT 142952-62-3P 153698-58-9P 153698-63-6P 153698-65-8P
 159293-87-5P 177787-08-5P 177983-92-5P 177983-93-6P
 177983-94-7P 177983-95-8P 177983-96-9P 177983-97-0P
 177983-99-2P 177984-01-9P 177984-02-0P 177984-03-1P
 177984-04-2P 177984-05-3P 177984-06-4P 178066-92-7P
 (prepn. and use as acid-decomposable dissoln. inhibitor for pos **photoresist**)
IT 75-59-2, Tetramethylammonium hydroxide 100-85-6,
Benzyltrimethylammonium hydroxide 123-41-1, Choline hydroxide
4466-18-6 5292-43-3, tert-Butyl bromoacetate 24979-70-2,
Poly(4-hydroxystyrene) 24979-74-6, 4-Hydroxystyrene-styrene
copolymer 29322-78-9, Poly(3-methyl-4-hydroxystyrene) 51866-62-7
76937-83-2, $\alpha,\alpha,\alpha',\alpha',\alpha'',\alpha'''$ -
Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 110726-28-8
138646-88-5 148452-55-5, 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane
 (reaction in prep. acid-decomposable dissoln. inhibitor for pos **photoresist**)

L70 ANSWER 41 OF 65 HCA COPYRIGHT 2007 ACS on STN
125:45124 Positive-working photosensitive composition. Aoai, Toshiaki;
Yamanaka, Tsukasa; Uenishi, Kazuya (Fuji Photo Film Co., Ltd.,
Japan). Eur. Pat. Appl. EP 708368 A1 19960424, 78 pp.
DESIGNATED STATES: R: BE, DE. (English). CODEN: EPXXDW.
APPLICATION: EP 1995-114054 19950907. PRIORITY: JP 1994-252351

19941018.

AB A pos.-working photosensitive compn. for the prodn. of lithog. plates comprises (a) a resin which is insol. in water but sol. in an alk. aq. soln., (b) a compd. which generates an acid upon irradn. with active light, (c) a low-mol.-wt. acid-decomposable dissoln.-inhibitive compd. having a mol. wt. of 3000 or less, contg. a group decomposable with an acid, and being capable of increasing its solv. in an alk. developer by the action of an acid, and (d) a resin contg. a basic nitrogen atom and having a wt.-av. mol. wt. of 2000 or more. The pos.-working photosensitive compn. of the present invention can easily and properly inhibit acid diffusion and acid deactivation on the surface thereof with time between the exposure and the heat treatment, keep the dissoln. inhibiting effect exerted by a dissoln.-inhibitive compd., and exhibit a good profile, a high sensitivity, and a high resolving power.

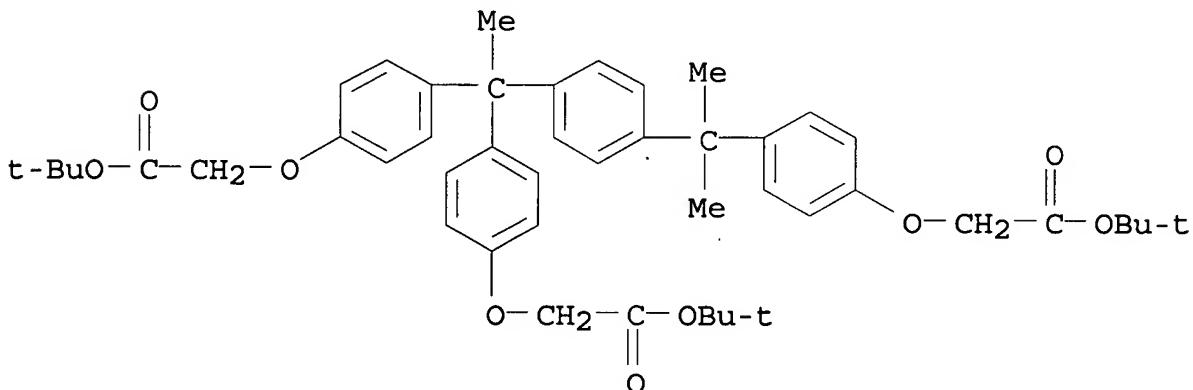
IT 153698-54-5 153698-55-6 160457-12-5

177787-04-1

(lithog. plate manuf. and resist pattern formation using pos.-working photosensitive compns. contg.)

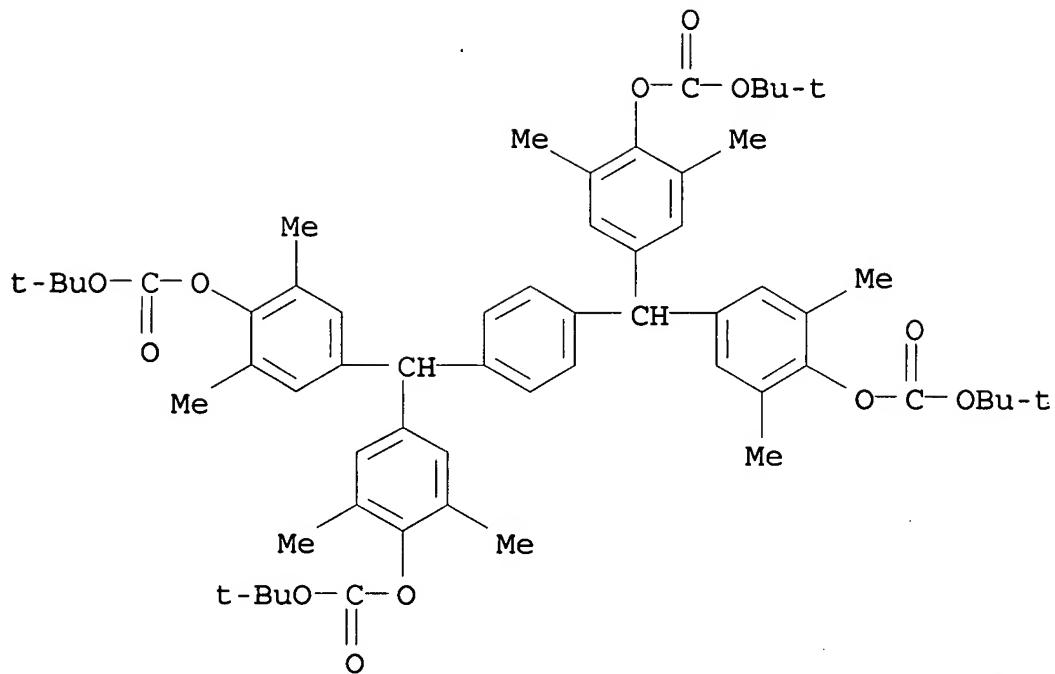
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylpropyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



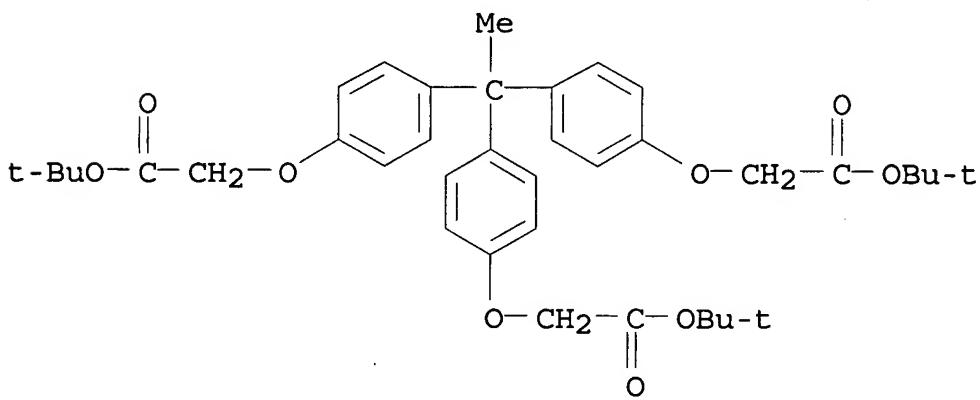
RN 153698-55-6 HCA

CN Carbonic acid, (1,4-phenylenedimethylidyne)tetrakis(2,6-dimethyl-4,1-phenylene) tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



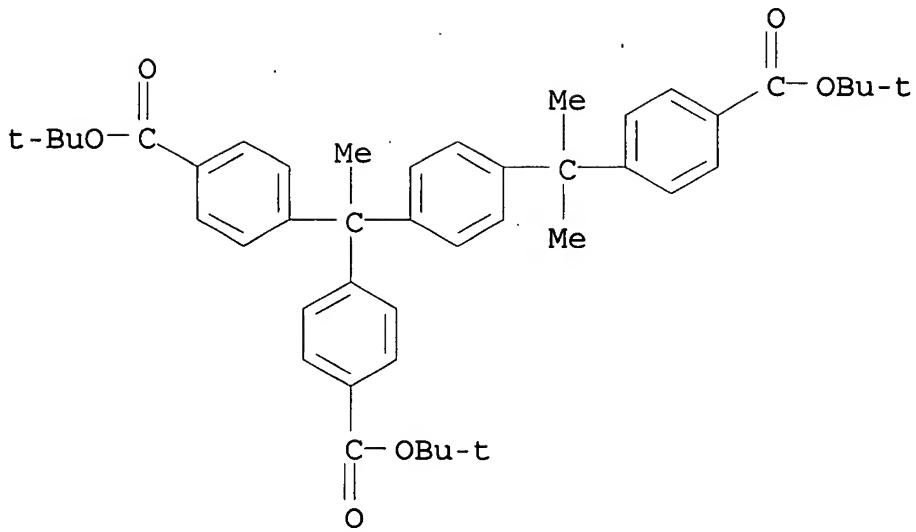
RN 160457-12-5 HCA

CN Acetic acid, 2,2',2'''-[ethylidynetris(4,1-phenyleneoxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 177787-04-1 HCA

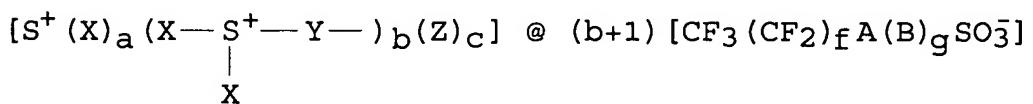
CN Benzoic acid, 4,4'-[1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]phenyl]-1-methylethyl]phenyl]ethylidene]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST pos photosensitive compn lithog plate; semiconductive device pos photoresist
 IT Resist
 (photo-, pos.-working, contg. alkali-sol. resins, photosensitive acid generators, acid-decomposable dissoln. inhibitors, and nitrogen-contg. resins)
 IT 24979-74-6, Styrene-p-hydroxystyrene copolymer 32335-20-9
 66003-76-7, Diphenyliodonium triflate 66003-78-9,
 Triphenylsulfonium triflate 124737-97-9 124738-06-3
 129674-22-2, 4-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene copolymer 133685-94-6, o-Hydroxystyrene-p-hydroxystyrene copolymer
 138089-25-5, 2,2-Bis(tert-butoxycarbonyloxyphenyl)propane
 142096-70-6 149642-75-1, p-Hydroxystyrene-4-vinylpyridine copolymer 152238-74-9 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate **153698-54-5**
153698-55-6 153698-59-0 153698-62-5 153698-63-6
 153698-67-0 **160457-12-5** 171429-59-7,
 p-Acetoxystyrene-p-hydroxystyrene copolymer 176109-33-4
 177786-96-8 177786-97-9 177786-98-0 177786-99-1,
 4-Hydroxystyrene-4-dimethylaminostyrene copolymer 177787-00-7
 177787-02-9 177787-03-0 **177787-04-1** 177787-05-2
 177787-06-3 177787-07-4 177787-08-5 177787-09-6 177799-93-8
 177799-95-0 178067-74-8
 (lithog. plate manuf. and resist pattern formation using pos.-working photosensitive compns. contg.)

L70 ANSWER 42 OF 65 HCA COPYRIGHT 2007 ACS on STN
 124:302584 Novel onium salt and radiation-sensitive resin composition containing same. Suzuki, Masamutsu; Kobayashi, Yasutaka; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08027094 A 19960130 Heisei, 20 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1994-177743 19940707.

GI



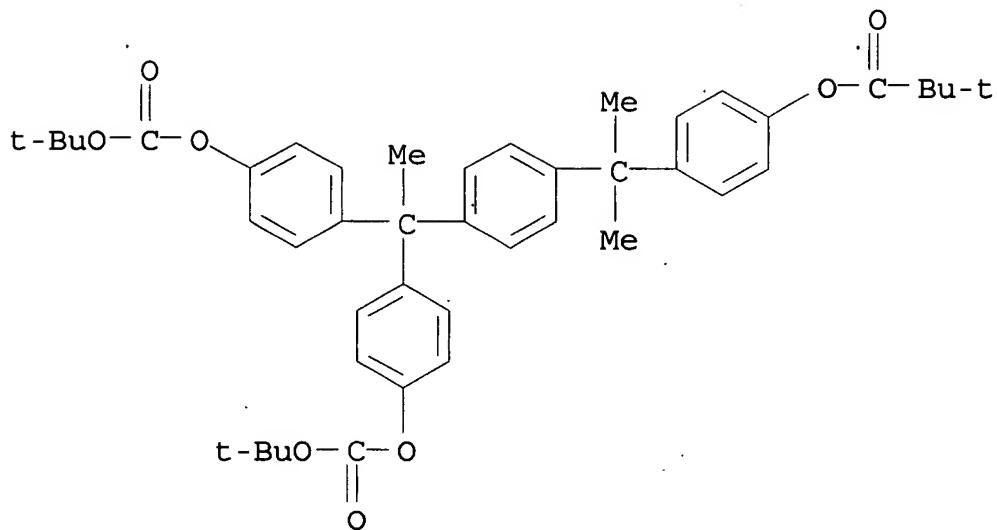
AB The title onium salt has formula I or II (X = arom. group, alkyl, cycloalkyl, aralkyl, phenacyl; Y = divalent org. group; Z = divalent group for forming ring with I or S; A = CH₂, CHF, CF₂; B = O, Ar, ArO, OAr (Ar = phenylene, naphthylene, anthrylene); g = 0, 1; e, f = 5-40; in I: a, b = 0-2; c = 0, 1; a + b + 2c = 2; in II: a, b = 0-3; c = 0, 1; a + b + 2c = 3). The title resin compn. (pos.-working) contains the above onium salt, an alk.-sol. resin and a solv.-controlling agent. The resin compn. (neg.-working) may contain the above onium salt, an alk.-sol. resin and a crosslinker.

IT 175905-39-2P

(prepd. as solv. controlling agent for radiation-sensitive resin compn.)

RN 175905-39-2 HCA

CN Propanoic acid, 2,2-dimethyl-, 4-[1-[4-[1,1-bis[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]ethyl]phenyl]-1-methylethyl]phenyl ester (9CI) (CA INDEX NAME)



IC ICM C07C305-04

ICS C07C305-22; C07C309-03; C07C309-28; C07C381-12; C08K005-37;
C08K005-42; C08L101-00; G03F007-004CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)IT **Resists**

(photo-, novel onium salt for)

IT 175905-39-2P

(prepd. as soly. controlling agent for radiation-sensitive resin
compn.)

L70 ANSWER 43 OF 65 HCA COPYRIGHT 2007 ACS on STN

124:160416 Positive photosensitive composition. Aoai, Toshiaki;
Yamanaka, Tsukasa (Fuji Photo Film Co., Ltd., Japan). Eur. Pat.
Appl. EP 691575 A2 19960110, 81 pp. DESIGNATED STATES: R:
BE, DE. (English). CODEN: EPXXDW. APPLICATION: EP 1995-110358
19950703. PRIORITY: JP 1994-152218 19940704; JP 1994-157278
19940708; JP 1994-160143 19940712.

AB A pos. photosensitive compn. comprises (a) a resin sol. in an aq. alkali soln. contg. a specific structure unit, (b) a compd. which generates an acid with irradn. of an active ray or radiation, and (c) a low-mol.-wt. acid-decomposable dissoln. inhibitor having a mol. wt. of not more than 3000, which possesses a tertiary alkyl ester group and whose solv. in an aq. alkali soln. is increased by the action of an acid, wherein compd. (c) is a compd. having at least two tertiary alkyl ester groups, in which the longest distance with respect to the distance between two tertiary ester groups selected arbitrarily comprises at least 10 bonding atoms except for the atoms contained in the ester groups or a compd. having at least

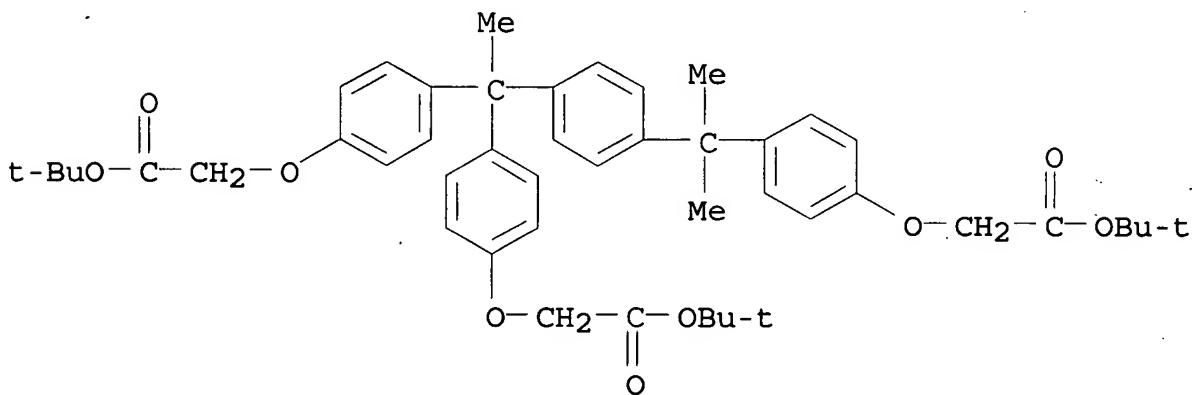
three tertiary alkyl ester groups, in which the longest distance with respect to the distance between two tertiary ester groups. The pos. photosensitive compn. has a high sensitivity, high resoln. and good profile and excels in storage stability and heat resistance of the resist soln.

IT 153698-54-5P 159293-89-7P 173786-60-2P

(prepn. and use in pos. photosensitive compns. for lithog. plate manuf.)

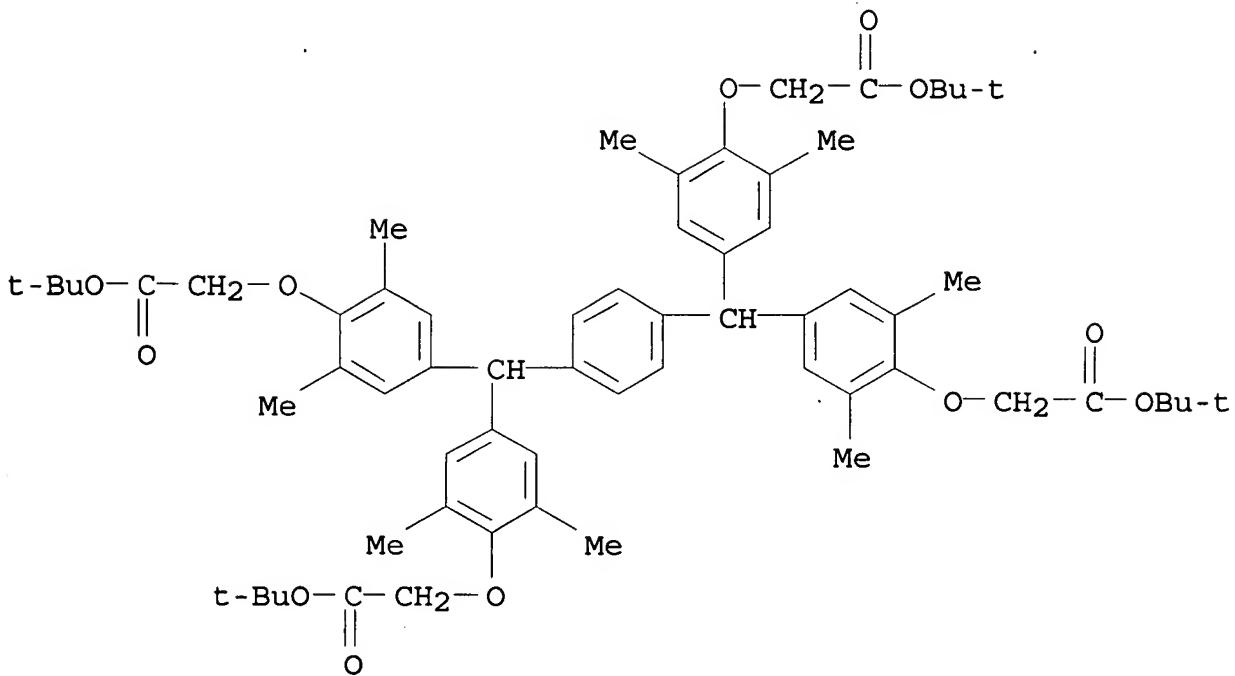
RN 153698-54-5 HCA

CN Acetic acid, 2,2'--[[1-[4-[1-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



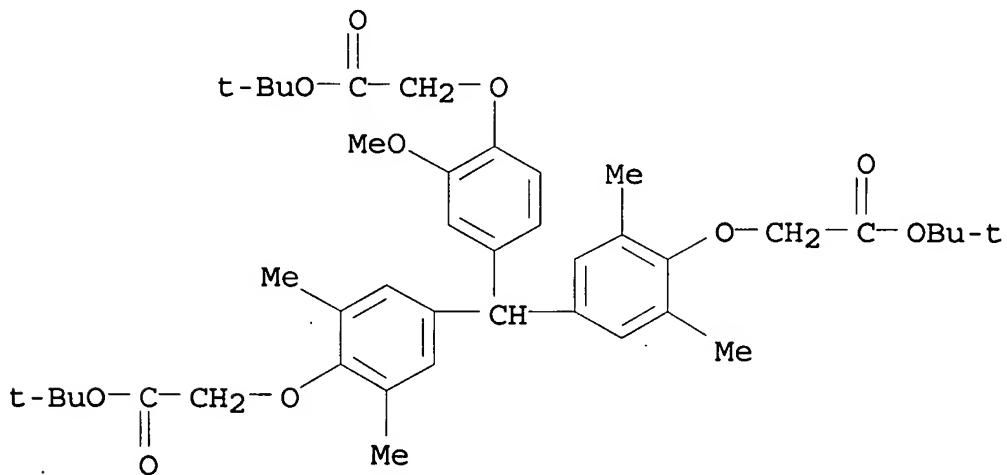
RN 159293-89-7 HCA

CN Acetic acid, 2,2',2'',2'''-[(1,4-phenylenedimethylidyne)tetrakis[(2,6-dimethyl-4,1-phenylene)oxy]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 173786-60-2 HCA

CN Acetic acid, 2,2'--[[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-3-methoxyphenyl]methylene]bis[(2,6-dimethyl-4,1-phenyleneoxy]bis-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Resists**

(photo-, pos.-working, contg. alkali-sol. resins and acid generators and acid-decomposable dissoln. inhibitors)

- IT 108-24-7DP, Acetic anhydride, reaction products with poly(hydroxystyrene) 24979-70-2DP, Poly(p-hydroxystyrene), reaction products with acetic anhydride 53746-03-5P, p-Acetoxy styrene-styrene copolymer 134443-05-3P 149614-51-7P
153698-54-5P 153698-58-9P 153698-59-0P 153698-63-6P
153698-65-8P **159293-89-7P** 159872-31-8P 162744-66-3P
173786-59-9P **173786-60-2P** 173786-61-3P 173786-62-4P
173786-63-5P 173786-64-6P 173786-65-7P 173786-66-8P
173786-67-9P 173786-68-0P 173786-69-1P 173786-70-4P
173786-71-5P 173786-73-7P 173786-74-8P 173786-75-9P
173786-76-0P 173786-77-1P 173786-79-3P 173786-80-6P
173786-81-7P 173786-82-8P
(prepn. and use in pos. photosensitive compns. for lithog. plate manuf.)

L70 ANSWER 44 OF 65 HCA COPYRIGHT 2007 ACS on STN

124:101869 Chemically amplified **resist** solution. Kobayashi, Hidekazu; Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07261377 A **19951013** Heisei, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-48634 19940318.

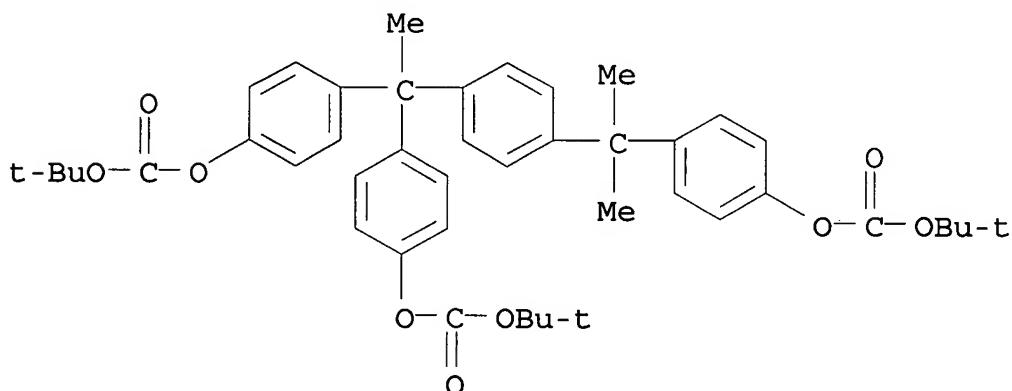
AB The soln. contains Me β-methoxyisobutyrate as a solvent. The soln. gives **resist** films with high sensitivity and resoln.

IT **151533-21-0P**

(dissoln. inhibitor; chem. amplified **resist** soln. contg. Me β-methoxyisobutyrate solvent for high sensitivity and resoln.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methyl ethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST resist methyl methoxyisobutyrate solvent
IT Resists
(chem. amplified resist soln. contg. Me
β-methoxyisobutyrate solvent for high sensitivity and resoln.)
IT 1886-74-4 66003-78-9 69432-40-2 114719-51-6 126615-05-2
133710-62-0
(acid generator; chem. amplified resist soln. contg. Me
β-methoxyisobutyrate solvent for high sensitivity and resoln.)
IT 97-64-3, Ethyl lactate 123-86-4, Butyl acetate 763-69-9, Ethyl
3-ethoxypropionate 3852-09-3, Methyl 3-methoxypropionate
7778-85-0, Propylene glycol dimethyl ether
(chem. amplified resist soln. contg. Me
β-methoxyisobutyrate solvent for high sensitivity and resoln.)
IT 5292-43-3DP, tert-Butyl bromoacetate, reaction products with
polyhydroxystyrene 24424-99-5DP, Di-tert-butyl dicarbonate,
reaction products with polyhydroxystyrene 27812-47-1P, tert-Butyl
acrylate-vinylphenol copolymer 59269-51-1DP, Polyhydroxystyrene,
tert-butoxycarbonyl-modified 95418-59-0DP, p-tert-Butoxystyrene-
styrene copolymer, hydrolyzed 170636-47-2P, tert-Butyl
acrylate-styrene-vinylphenol copolymer
(chem. amplified resist soln. contg. Me
β-methoxyisobutyrate solvent for high sensitivity and resoln.)
IT 80-05-7, Bisphenol A, reactions 24424-99-5, Di-tert-butyl
dicarbonate
(chem. amplified resist soln. contg. Me
β-methoxyisobutyrate solvent for high sensitivity and resoln.)
IT 3852-11-7, Methyl β-methoxyisobutyrate 24979-70-2D,
hydrogenated
(chem. amplified resist soln. contg. Me
β-methoxyisobutyrate solvent for high sensitivity and resoln.)
IT 3089-11-0
(crosslinking agent; chem. amplified resist soln.
contg. Me β-methoxyisobutyrate solvent for high sensitivity and resoln.)
IT 117458-06-7P 151533-21-0P
(dissoln. inhibitor; chem. amplified resist soln.
contg. Me β-methoxyisobutyrate solvent for high sensitivity and resoln.)

L70 ANSWER 45 OF 65 HCA COPYRIGHT 2007 ACS on STN
124:101865 Positive-working photoresist composition.

Yamanaka, Tsukasa; Sakaguchi, Shinji; Kokubo, Tadayoshi; Kawabe, Yasumasa (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07271037 A 19951020 Heisei, 53 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-63862 19940331.

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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

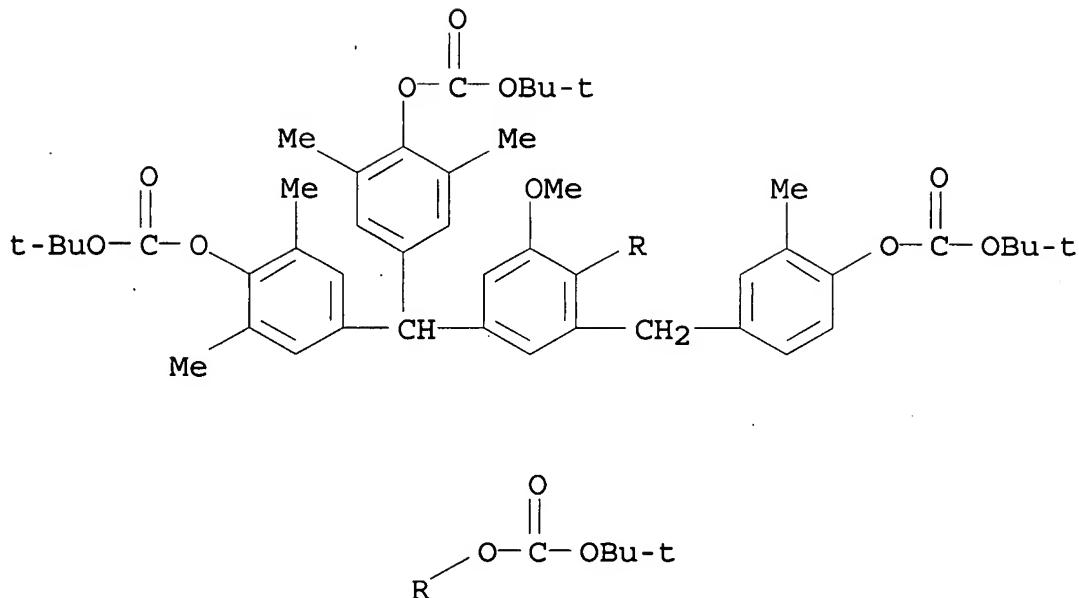
AB The title compn. comprises an alkali sol. resin, a photoacid generator, and ≥ 1 kinds of compds. selected from I and II
(R1-41 = H, X_{Ra1}, CN, OD0; X1-10 = single bond, carbonyl, sulfido, sulfonyl, CRb1Rb2; X = single bond, O, S, CO, OCO, NRa1CO, NRa2; Ra1 = C1-10 alkyl, alkylene, cycloalkyl, haloalkyl, aryl, alkylaryl, aralkyl; Ra2 = H, Ra1; Rb1, Rb2 = H, Me, Et, C1-4 haloalkyl; D0-12 = H, Dinh; Dinh = XiRi; Xi = CRb1Rb2, CRb1Rb2O, CO, CS, COO, COS, CRb1Rb2CO, CRb1Rb2COO, CRb1ORi, CONRb1; Ri = H, C1-20 alkyl, alkenyl, C3-20 cycloalkyl, C6-20 aryl, cumyl, adamantyl, SiZiRb3ZiRb4ZiRb5, tetrahydro-pyranyl, pyranyl, 1,3-dithia-indane-2-yl; Rb3-b5 = C1-20 alkyl, cycloalkyl, alkenyl, C6-20 aryl; Zi = single bond, O; i, j, k, m, n = 0, 1).

IT 172651-23-9P

(pos.-working photoresist compn. comprising)

RN 172651-23-9 HCA

CN Carbonic acid, [[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]-3-[[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]-3-methylphenyl]methyl]-5-methoxyphenyl]methylene]bis(2,6-dimethyl-4,1-phenylene)bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST pos working **photoresist** compn
 IT **Resists**
 (photo-, pos.-working, pos.-working **photoresist** compn.)
 IT 172651-16-0P 172651-17-1P 172651-18-2P 172651-19-3P
 172651-20-6P 172651-21-7P 172651-22-8P 172651-23-9P
 172651-24-0P 172651-25-1P 172651-26-2P 172651-27-3P
 172651-28-4P 172651-29-5P 172651-30-8P 172651-31-9P
 172651-32-0P
 (pos.-working **photoresist** compn. comprising)
 IT 172651-14-8P 172651-15-9P 172651-33-1P 172651-34-2P
 (pos.-working **photoresist** compn. from)
 IT 91-04-3, 2,6-Bis(hydroxymethyl)-p-cresol 95-48-7, o-Cresol,
 reactions 95-87-4 172651-13-7
 (pos.-working **photoresist** compn. from)

L70 ANSWER 46 OF 65 HCA COPYRIGHT 2007 ACS on STN
 123:354665 Positive-working radiation-sensitive resin composition and patterning using same. Fukunaga, Masanori; Kitaori, Tomoyuki; Koyanagi, Takao; Nagasawa, Kotaro (Nippon Kayaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 07219216 A 19950818 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-25870 19940131.
 AB The chem. amplification-type radiation-sensitive compn. comprises a naphthoquinonediazide compd. and a compd. generating an acid upon

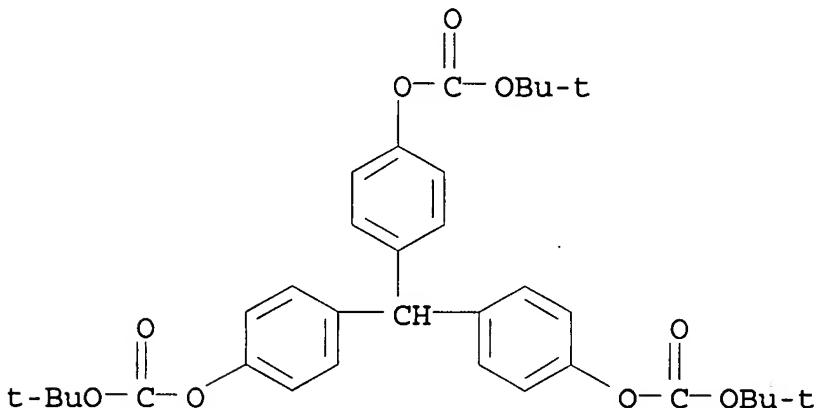
irradn. The compn. is coated on a substrate, heat-treated, uniformly irradiated with (near) UV, imagewise exposed, heat-treated, and developed to give patterns. The compn. shows high sensitivity, and gives stable, high resln. images with dry etching resistance.

IT 153041-55-5P

(acid-decomposable compd.; pos.-working **resist** compn.
contg. naphthoquinonediazide compd. and acid-generating agent)

RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-022; G03F007-039; G03F007-26; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST naphthoquinonediazide compd radiation sensitive **resist**

IT Phenolic resins, uses

(pos.-working **resist** compn. contg.

naphthoquinonediazide compd. and acid-generating agent)

IT **Resists**

(radiation-sensitive, pos.-working **resist** compn. contg.

naphthoquinonediazide compd. and acid-generating agent)

IT 143264-90-8P, 3,3-Bis(4-tert-butoxycarbonyloxy-3-methylphenyl)phthalide 153041-55-5P

(acid-decomposable compd.; pos.-working **resist** compn.

contg. naphthoquinonediazide compd. and acid-generating agent)

IT 66003-78-9

(pos.-working **resist** compn. contg.

naphthoquinonediazide compd. and acid-generating agent)

IT 94896-59-0P 136958-90-2P, Bisphenol A 1,2-naphthoquinonediazide-4-sulfonate

(pos.-working **resist** compn. contg.

naphthoquinonediazide compd. and acid-generating agent)

IT 25053-88-7, p-Cresol-formaldehyde copolymer
 (pos.-working **resist** compn. contg.
 naphthoquinonediazide compd. and acid-generating agent)

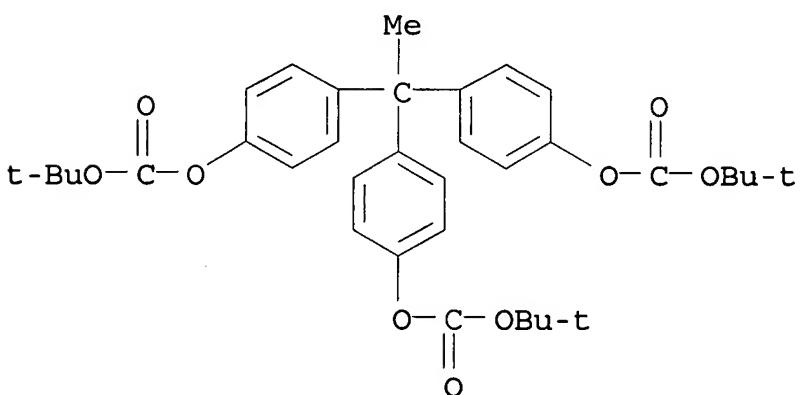
L70 ANSWER 47 OF 65 HCA COPYRIGHT 2007 ACS on STN
 123:270797 Photosensitive composition and pattern formation using same.
 Oonishi, Kyonobu; Sato, Kazuo; Chiba, Kenji; Hayashi, Yoshio;
 Hayase, Rumiko; Niki, Hiroichi (Tokyo Shibaura Electric Co, Japan).
 Jpn. Kokai Tokkyo Koho JP 07199468 A 19950804 Heisei, 29
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-354206
 19931228.

AB The title compn. comprises an alk.-sol. compd. upon acid-decomprn. and an acid generating compd. upon irradn., wherein the alk.-sol. compd. is based on one component showing small mol. polarity and slow alk. dissolving speed and other component showing big mol. polarity and fast alk. dissolving speed. Pattern formation using the photosensitive compn. is also claimed. The photosensitive compn. as **resist** material shows high-sensitivity and high-resoln. to short wavelength lights to give **resist** pattern with fine profile.

IT 143213-46-1
 (alk.-sol. compd. contained in photosensitive compn. for pattern formation)

RN 143213-46-1 HCA

CN Carbonic acid, ethyldynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Resists**

(photo-, compn. for pattern formation)

IT 117458-06-7 129674-22-2 142952-62-3 143213-46-1

146969-18-8 169123-13-1 169123-14-2

(alk.-sol. compd. contained in photosensitive compn. for pattern formation)

L70 ANSWER 48 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:183515 Radiation-sensitive resin compositions. Kobayashi, Hidekazu; Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07092663 A 19950407 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-261874 19930924.

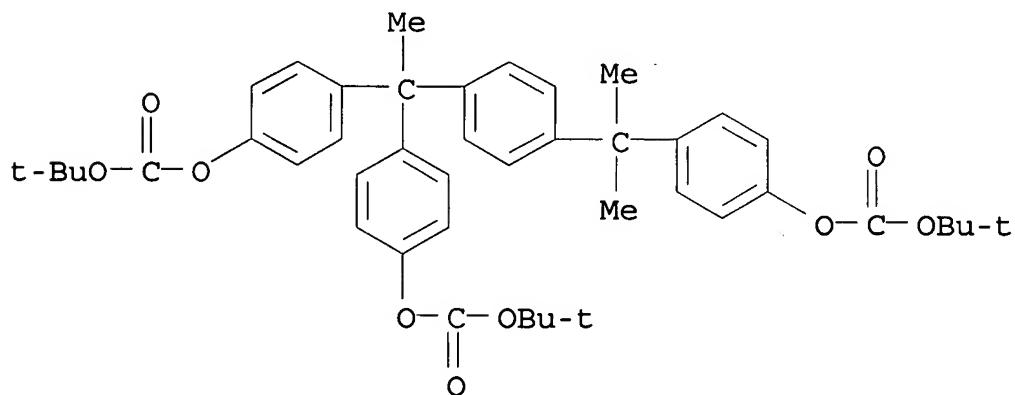
AB The title resin compns. comprise a **resist**, in which the solv. of the radiation-exposed area in the developing soln. is changed by the chem. change caused by catalytic action of the acid generated by irradn. to form a pattern, are dissolved in a mixed solvent of Bu acetate (I) and Et 3-ethoxypropionate (II). The compns. show a high sensitivity, high resoln., and good coatability in spin-coating on large-scaled substrates. Thus, a poly(hydroxystyrene) partially substituted with tert-butoxycarbonyl group and triphenylsulfonium triflate were dissolved in a I-II mixt. (50:50 wt. ratio) to give a **resist** soln.

IT 151533-21-0P

(dissoln. inhibitor; radiation sensitive **resist** compn.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

ST radiation sensitive **resist** compn solventIT **Resists**

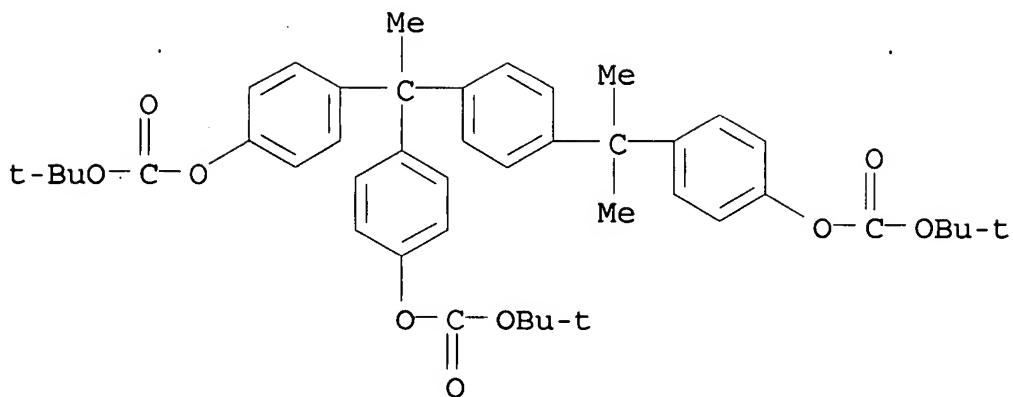
- (radiation-sensitive, radiation-sensitive **resist** compn.
using solvent contg. mixt. of Bu acetate and Et ethoxypropionate)
- IT 66003-78-9, Triphenylsulfonium triflate
(acid generator; radiation-sensitive **resist** compn.)
- IT 167634-73-3
(crosslinking agent; radiation-sensitive **resist** compn.)
- IT 117458-06-7P 151533-21-0P
(dissoln. inhibitor; radiation sensitive **resist** compn.)
- IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with
polyhydroxystyrene 59269-51-1DP, Poly(hydroxystyrene),
butoxycarbonylated 95418-59-0DP, hydrolyzed
(radiation sensitive **resist** compn.)
- IT 123-86-4, Butyl acetate 763-69-9, Ethyl 3-ethoxypropionate
(radiation-sensitive **resist** compn. using solvent contg.
mixt. of Bu acetate and Et ethoxypropionate)

L70 ANSWER 49 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:183514 Radiation-sensitive resin compositions. Kobayashi, Hidekazu;
Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan).
Jpn. Kokai Tokkyo Koho JP 07092662 A 19950407 Heisei, 12
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-261873
19930924.

AB The title resin compns. comprise a **resist**, of which the
soly. of the radiation-exposed area in the developing soln. is
changed by the chem. change caused by catalytic action of the acid
generated by irradn. to form a pattern, dissolved in a mixed solvent
composed of an ester of unsubstituted C1-4 satd. aliph. carboxylic
acids and C1-6 alcs. and a propylene glycol alkyl ether and/or
propylene glycol alkyl ether acetate. The compns. show high
sensitivity, high resoln., and good coatability in spin-coating on
large-scaled substrates. Thus, a poly(hydroxystyrene) partially
substituted with tert-butoxy carbonyl group and triphenylsulfonium
triflate were dissolved in a Bu acetate-propylene glycol di-Me ether
mixt. (50:50) to give a **resist** soln.

- IT 151533-21-0P
(dissoln. inhibitor; radiation sensitive **resist** compn.)
- RN 151533-21-0 HCA
- CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]
-1-methyl]ethyl]phenyl]ethylidene]di-4,1-phenylene
bis(1,1-dimethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
 ICS G03F007-038; G03F007-039; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST radiation sensitive **resist** compn solvent
 IT **Resists**
 (radiation-sensitive, solvent mixt. for radiation-sensitive **resist** contg. acid generator)
 IT 66003-78-9, Triphenylsulfonium triflate 130285-49-3
 (acid generator; radiation-sensitive **resist** compn.)
 IT 3089-11-0
 (crosslinking agent; radiation-sensitive **resist** compn.)
 IT 117458-06-7P 151533-21-0P
 (dissoln. inhibitor; radiation sensitive **resist** compn.)
 IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with polyhydroxystyrene 59269-51-1DP, Poly(hydroxystyrene), butoxycarbonylated 95418-59-0DP, p-tert-Butoxystyrene-styrene copolymer, hydrolyzed
 (radiation sensitive **resist** compn.)
 IT 123-86-4, Butyl acetate 123-92-2, Isoamyl acetate 638-11-9, Isopropyl butyrate 638-49-3, Amyl formate 7778-85-0, Propylene glycol dimethyl ether 84540-57-8, Propylene glycol monomethyl ether acetate
 (solvent mixt. for radiation-sensitive **resist** contg. acid generator)

L70 ANSWER 50 OF 65 HCA COPYRIGHT 2007 ACS on STN
 123:156422 Chemically amplified **resist** composition..
 Kobayashi, Eiichi; Murata, Makoto; Ota, Toshiyuki; Tsuji, Akira
 (Japan Synthetic Rubber Co., Ltd., Japan). Eur. Pat. Appl. EP
 634696 A1 19950118, 23 pp. DESIGNATED STATES: R: DE, FR,
 GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1994-305148

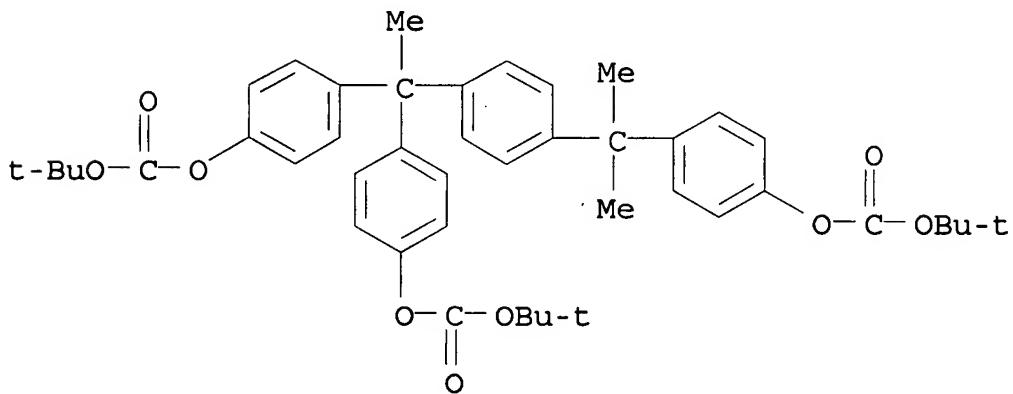
19940714. PRIORITY: JP 1993-197813 19930715; JP 1993-253740
19930916; JP 1993-261875 19930924.

AB Pos.-tone and neg.-tone chem. amplified **resist** compns.
comprising: (a-1) a blocked resin, (a-2) a combination of an alkali-sol. resin and a dissoln. controlling agents, or (a-3) a combination of an alkali-sol. resin and a crosslinking agent, (b) a photoacid generator, and (c) specific kinds of solvents. The both pos.-tone and neg.-tone **resist** compns. exhibits superior sensitivity, high resoln. capability, and excellent storage stability, and can be excellently applied esp. to large sized substrates by spin-coating for producing excellently shaped patterns by irradn. The compns. can be used with advantage as a chem. amplified **resist** for the manuf. of semiconductor devices or integrated circuits.

IT 151533-21-0
(dissoln. controlling agent; Chem. amplified **resist** compn.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST chem amplified **resist**; dissoln controlling agent resin combination; crosslinking agent resin combination; solvent photoresist semiconductor integrated circuit
IT Semiconductor devices
(Chem. amplified **resist** compn.)
IT Electric circuits
(integrated, Chem. amplified **resist** compn.)
IT Resists
(photo-, Chem. amplified **resist** compn.)

IT 95418-59-0D, hydrolyzed 147625-42-1
(Chem. amplified **resist** compn.)
IT 3089-11-0
(crosslinking agent; Chem. amplified **resist** compn.)
IT 117458-06-7 151533-21-0
(dissoln. controlling agent; Chem. amplified **resist** compn.)
IT 97-64-3, Ethyl lactate 123-86-4 123-92-2, Iso-amyl acetate
539-82-2 638-11-9, Isopropyl butyrate 638-49-3, Amyl formate
7778-85-0, Propylene glycol dimethyl ether 52125-53-8, Propylene
glycol ethyl ether 84540-57-8, Propylene glycol methyl
etheracetate
(solvent; Chem. amplified **resist** compn.)

L70 ANSWER 51 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:97971 Chemical amplification radiation **resist**. Kajita,
Tooru; Suzuki, Masamitsu; Oota, Toshuki; Tsuji, Akira (Japan
Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07128852
A 19950519 Heisei, 19 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1993-291521 19931028.

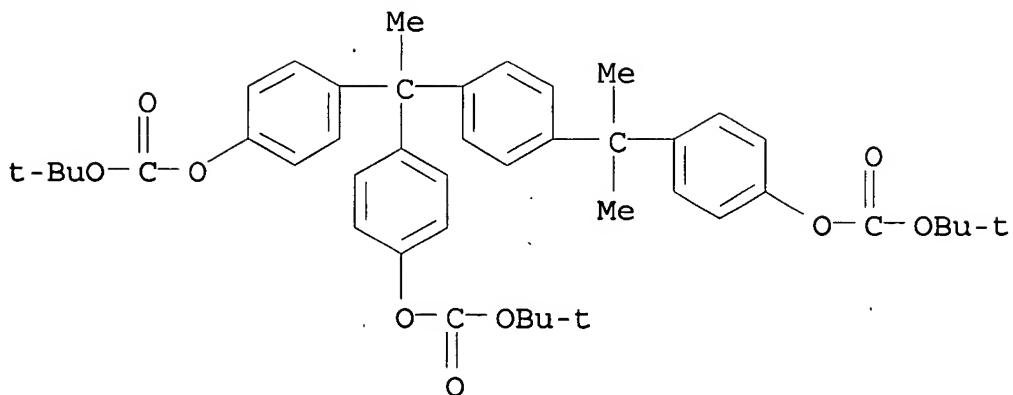
GI For diagram(s), see printed CA Issue.

AB A chem. amplification radiation **resist** showing improved
sensitivity, pattern shape, resoln., and heat resistance comprises a
resin and a compd. represented by the formula R1S(CR2R3)SO2R4, I, or
II (R1 = H or an org. group; R2, R3 = H, halogen, or an org. group;
R4 = an org. group; R5 = a diazo group or a divalent org. group
forming a 3-8-membered C or heterocyclic ring; R6 = a divalent org.
group) as a radiation-sensitive acid-generating agent.

IT 151533-21-0P
(prepn. and use as solv.-controlling agent in chem. amplification
radiation **resists**)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]
]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-028
 ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST chem amplification radiation **resists** acid generation
 IT **Resists**
 (chem. amplification; contg. org. sulfonyl compds. as radiation-sensitive acid-generating agents)
 IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9,
 Triphenylsulfonium trifluoromethanesulfonate
 (acid-generating agent in chem. amplification radiation **resists**)
 IT 98-92-0, Nicotinamide 101-80-4, 4,4'-Diaminodiphenyl ether
 3089-11-0, Hexakis(methoxymethyl)melamine 29838-16-2
 (chem. amplification radiation **resists** contg. org. sulfonyl compds. as acid-generating agents and)
 IT 59662-65-6P 87228-66-8P 107536-13-0P 165457-49-8P
 165457-50-1P 165457-51-2P
 (prepn. and use as acid-generating agent in chem. amplification radiation **resists**)
 IT 117458-06-7P 151533-21-0P
 (prepn. and use as solv.-controlling agent in chem. amplification radiation **resists**)
 IT 24979-70-2DP, Poly(p-hydroxystyrene), tert-butoxysulfonylated and trimethylsilylated 24979-74-6P, p-Hydroxystyrene-styrene copolymer
 (prepn. and use in chem. amplification radiation **resists**)

L70 ANSWER 52 OF 65 HCA COPYRIGHT 2007 ACS on STN
 123:70366 **Resist** coating compositions. Murata, Makoto; Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07036190 A 19950207 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-197814 19930715.

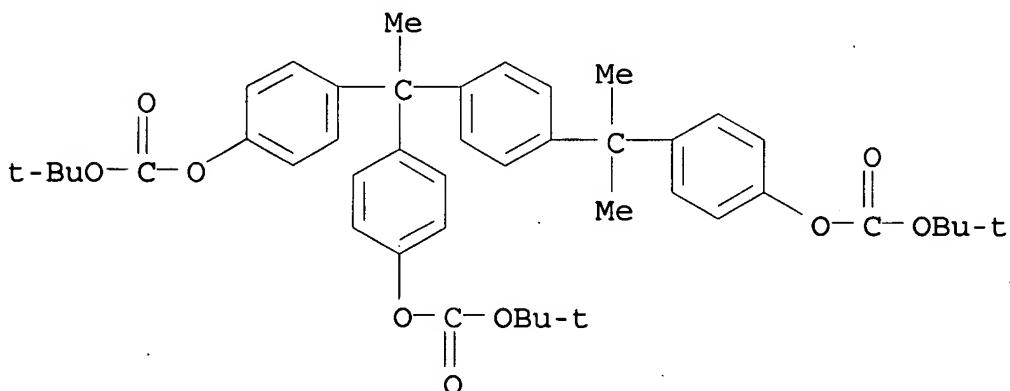
AB The title compns., used in the pattern formation utilizing the change in the solv. of the radiation-exposed area in the developing soln. caused by the chem. change catalyzed by the acid generated by irradn., employ propylene glycol dialkyl ether as a solvent. A pos.-working **resist** coating compn. comprising poly(hydroxystyrene) partially substituted with tert-butoxycarbonyl group, triphenylsulfonium triflate, and propylene glycol di-Me ether gave a high resoln. pattern with good profile, and showed good storage stability.

IT 151533-21-0P

(dissoln. inhibitor; **resist** coating compn. using propylene glycol dialkyl ether as solvent)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **resist** coating compn solvent; propylene glycol dialkyl ether **resist**

IT **Resists**

(radiation-sensitive, **resist** coating compn. using propylene glycol dialkyl ether as solvent)

IT 117458-06-7P 151533-21-0P

(dissoln. inhibitor; **resist** coating compn. using propylene glycol dialkyl ether as solvent)

IT 59269-51-1DP, Poly(hydroxystyrene), butoxycarbonylated
95418-59-0P, p-tert-Butoxystyrene-styrene copolymer
(**resist** coating compn. using propylene glycol dialkyl ether as solvent)

IT 7778-85-0, Propylene glycol dimethyl ether

(resist coating compn. using propylene glycol dialkyl ether as solvent)

L70 ANSWER 53 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:44372 Positive-working resist composition and patterning using same. Tanaka, Sachiko; Kumada, Teruhiko; Horibe, Hideo; Kubota, Shigeru; Hizuka, Juji (Mitsubishi Electric Corp, Japan). Jpn. Kokai Tokkyo Koho JP 06242607 A 19940902 Heisei, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-28880 19930218.

AB The title compn. comprises (1) 40-90% polymer compd. in which 5-50 mol% of groups providing alk. solv. is substituted with protective groups decomposable by an acid, (2) 10-55% compd. which becomes alk. sol. upon decompn. by an acid, and (3) 0.03-15% compd. forming an acid upon irradn. of light. This compn. provides a large solv. ratio of exposed and nonexposed regions of the resist film with a developer.

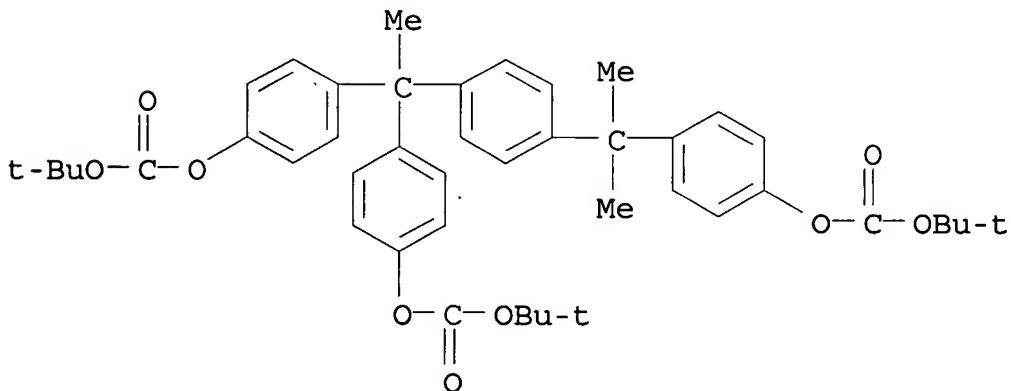
IT 151533-21-0 153041-55-5 163916-08-3

163916-09-4

(pos.-working resist compn. and patterning using same)

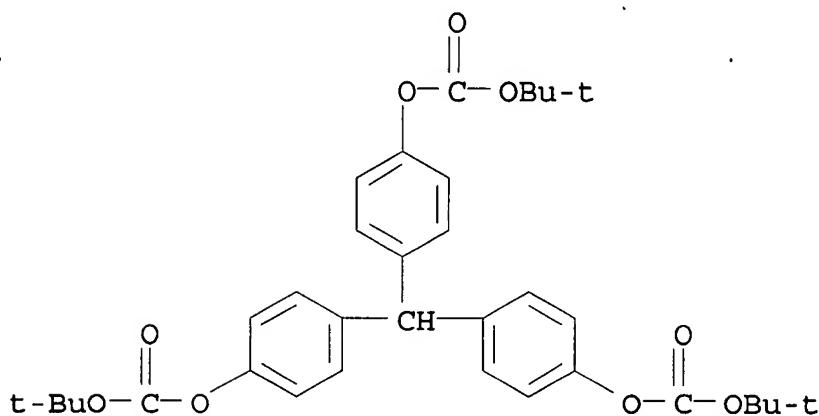
RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylpropyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



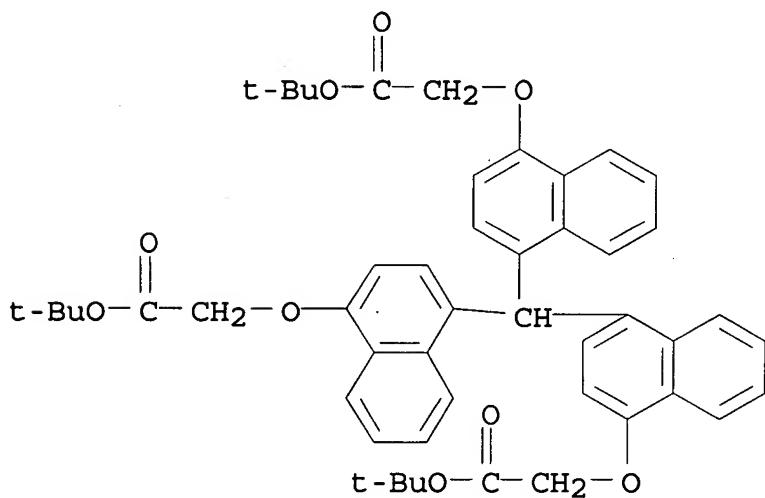
RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



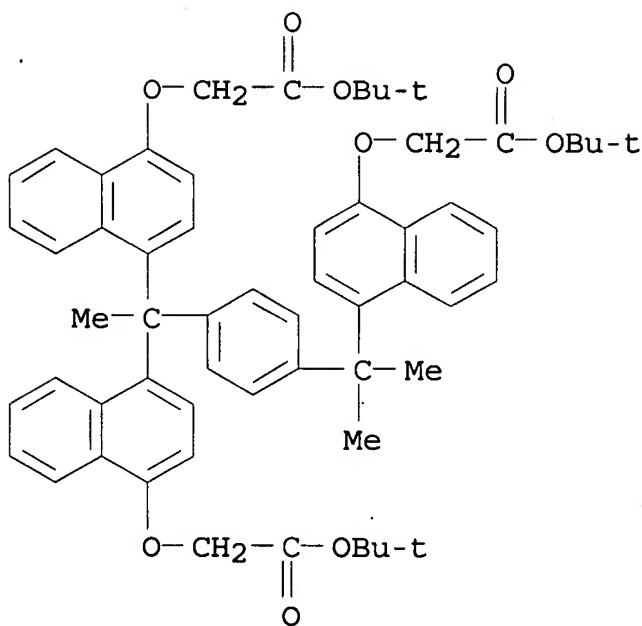
RN 163916-08-3 HCA

CN Acetic acid, 2,2',2'''-[methylidynetris(4,1-naphthalenediyloxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 163916-09-4 HCA

CN Acetic acid, 2,2'-(1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-1-naphthalenyl]-1-methylethyl)phenyl]ethylidene]bis(4,1-naphthalenediyloxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS G03F007-004; G03F007-029; G03F007-30; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST resist compn pos working
 IT Resist
 (photo-, pos.-working, compn. and patterning using same)
 IT 437-13-8, Triphenylsulfonium tetrafluoroborate 6542-67-2,
 2,4,6-Tris(trichloromethyl)triazine 57840-38-7, Triphenylsulfonium hexafluoroantimonate 66003-76-7, Diphenyliodonium triflate 66003-78-9, Triphenylsulfonium triflate 84563-54-2 121172-98-3,
 p-Nitrobenzyl-9,10-dimethoxyanthracene-2-sulfonate 130698-17-8,
 Triphenylsulfonium tetrafluorophosphate 163915-96-6
 (pos.-working resist compn. and patterning using same)
 IT 117458-06-7 139254-88-9 143897-56-7 146969-18-8
151533-21-0 153041-55-5 163915-97-7
 163915-98-8 163915-99-9 163916-00-5 163916-01-6 163916-02-7
 163916-03-8 163916-04-9 163916-05-0 163916-06-1 163916-07-2
163916-08-3 163916-09-4 164177-79-1
 164177-80-4 164177-81-5 164177-82-6 164177-83-7 164177-84-8
 (pos.-working resist compn. and patterning using same)

L70 ANSWER 54 OF 65 HCA COPYRIGHT 2007 ACS on STN
 123:22183 Positive working photosensitive composition. Aoai, Toshiaki;
 Yamanaka, Tsukasa; Kokubo, Tadayoshi (Fuji Photo Film Co., Ltd.,
 Japan). Ger. Offen. DE 4405108 A1 19940825, 71 pp.
 (German). CODEN: GWXXBX. APPLICATION: DE 1994-4405108 19940217.

PRIORITY: JP 1993-51222 19930218; JP 1993-111129 19930415.

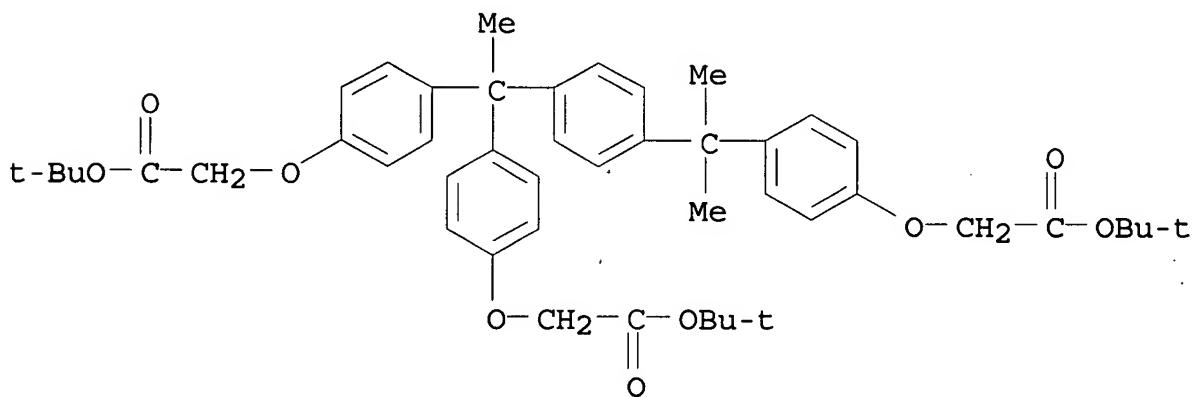
AB The title material comprises a binder resin, a photoacid generator, and low mol. wt. acid-splittable dissoln. inhibitor where the dissoln. inhibitor is selected from: (1) a compd. contg. ≥ 2 acid-splittable groups with a distance of ≥ 10 atoms between 2 acid-splittable groups; and (2) a compd. contg. ≥ 3 acid-splittable groups with a distance of ≥ 9 atoms between 2 acid-splittable groups. The material has improved photosensitivity, solv., storage stability, and thermal stability.

IT 153698-54-5 161822-25-9

(dissoln. inhibitor for photosensitive compn.)

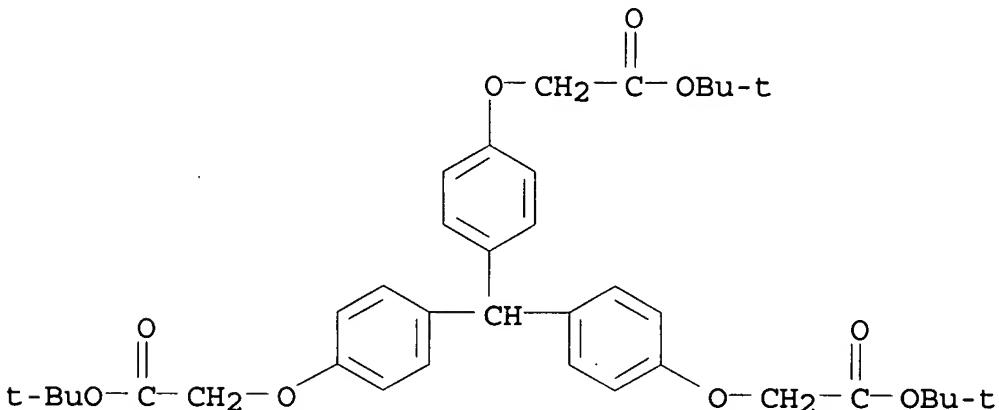
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 161822-25-9 HCA

CN Acetic acid, 2,2',2'''- [methylidynetris(4,1-phenyleneoxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS C08L025-18

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Resists**

(photo-, dissoln. inhibitor)

IT 153698-54-5 153698-60-3 153698-62-5 153698-63-6
 161822-25-9 161822-26-0 162181-27-3
 (dissoln. inhibitor for photosensitive compn.)

L70 ANSWER 55 OF 65 HCA COPYRIGHT 2007 ACS on STN

122:303027 Photosensitive resin composition containing photodecomposable sulfonimide compound. Kawamura, Koichi; Kobayashi, Fumikazu; Yamanaka, Tsukasa (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07028245 A 19950131 Heisei, 19 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-169032 19930708.

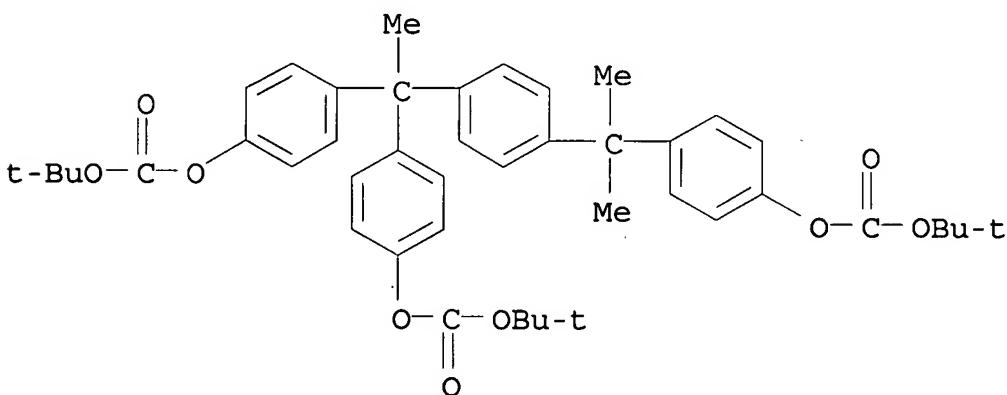
AB The compn. contains a sulfonimide compd. R₁SO₂NR₃SO₂R₂ [R₁₋₃ = (substituted) arom. group, (substituted) alkyl] and a polymer binder which is water unsol. and alkali-sol. or swellable, optionally contg. a compd. having ≥1 C-O-C or C-O-Si bond severed in presence of acids, a compd. having ≥2 crosslinkable groups in presence of acids, a polymerizable ethylenic compd., or a color-changeable compd. by acids or radicals. The compn. showed high sensitivity and gave high-resoln. resist images.

IT 151533-21-0

(photosensitive resin compn. contg. photodecomposable sulfonimide compd. as photoacid or photoradical generator)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylpropyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



CC ICS G03F007-00; G03F007-004; G03F007-027; G03F007-028; H01L021-027
 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)

ST photosensitive resin sulfonimide photoacid generator; imaging
 photoresist photodecomposable sulfonimide; pos
 photoresist sulfonimide photoradical generator

IT Resists
 (photo-, photosensitive resin compn. contg. photodecomposable
 sulfonimide compd. as photoacid or photoradical generator)

IT 4986-89-4, Pentaerythritol tetraacrylate 55918-70-2,
 m-Cresol-p-cresol copolymer 65697-21-4, Benzyl
 methacrylate-methacrylic acid copolymer 151533-21-0
 (photosensitive resin compn. contg. photodecomposable sulfonimide
 compd. as photoacid or photoradical generator)

L70 ANSWER 56 OF 65 HCA COPYRIGHT 2007 ACS on STN

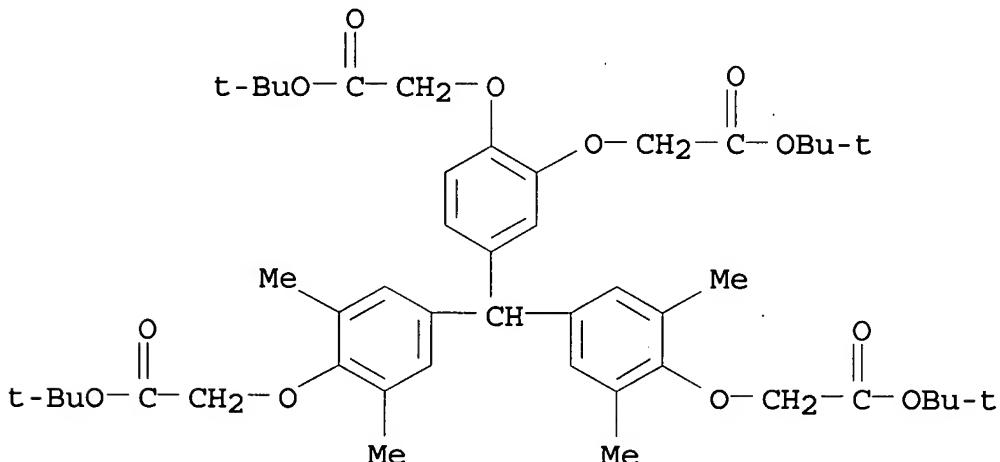
122:278146 Positive-working **photoresist** composition with
 durability, high sensitivity, and high resolution. Aoso, Toshiaki;
 Yamanaka, Tsukasa; Kokubo, Tadayoshi (Fuji Photo Film Co Ltd,
 Japan). Jpn. Kokai Tokkyo Koho JP 06266109 A 19940922
 Heisei (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-54121
 19930315.

AB The title compn. comprises a solvent with b.p. 130-155° and a
 dissoln. inhibitor having ≥2 groups capable of dissoln. upon
 reaction with an acid.

IT 153698-51-2 153698-54-5 153698-55-6
 (pos.-working **photoresist** compn. with durability, high
 sensitivity, and high resoln.)

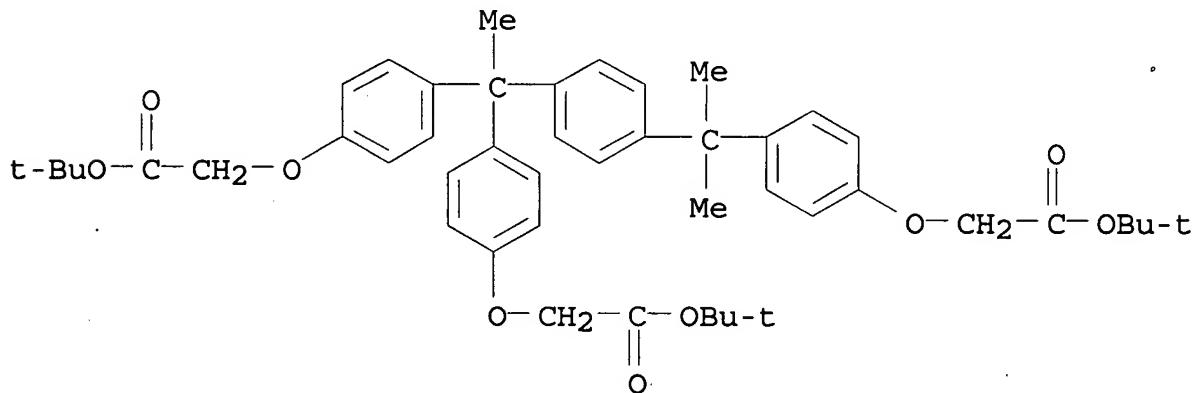
RN 153698-51-2 HCA

CN Acetic acid, 2,2'-'-[[4- [bis[4- [2- (1,1-dimethylethoxy) -2-oxoethoxy] -
 3,5-dimethylphenyl]methyl]-1,2-phenylene]bis(oxy)]bis-,
 bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



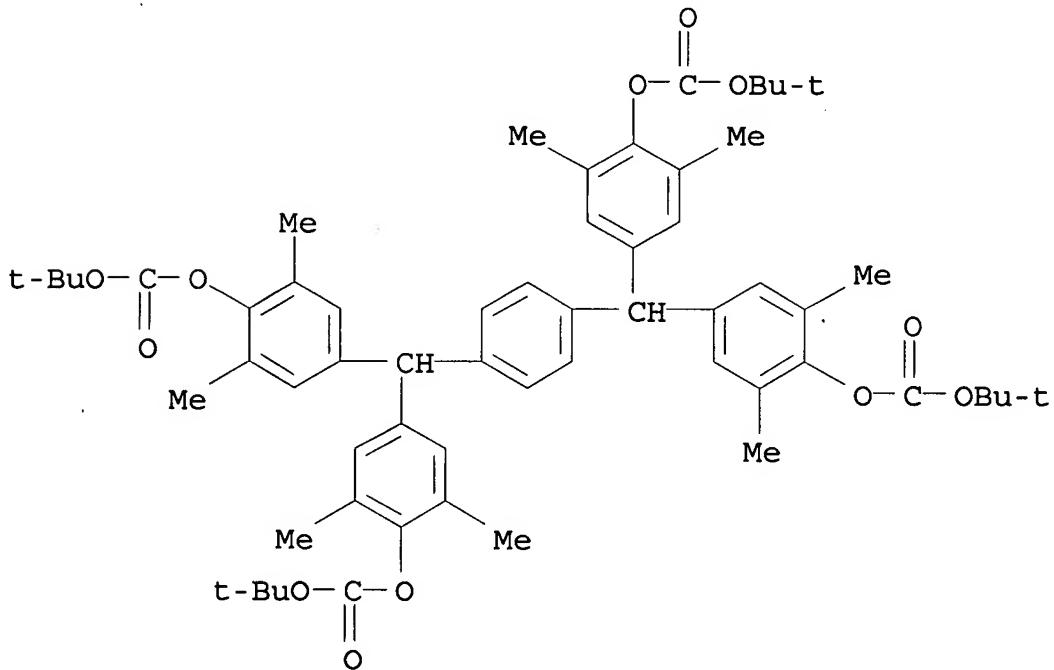
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 153698-55-6 HCA

CN Carbonic acid, (1,4-phenylenedimethylidyne)tetrakis(2,6-dimethyl-4,1-phenylene) tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

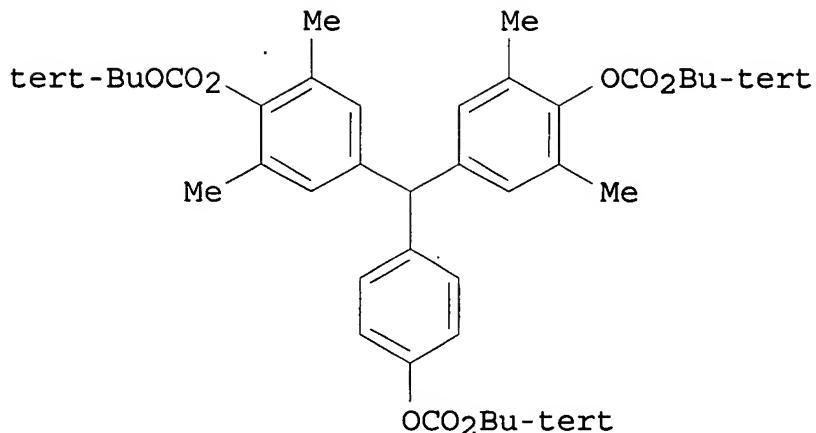


IC ICM G03F007-039

CC ICS G03F007-004; H01L021-027
74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST chem amplification pos working photoresist
IT Electric circuits
(integrated, pos.-working photoresist compn. with durability, high sensitivity, and high resoln.)
IT Resists
(photo-, pos.-working, pos.-working photoresist compn. with durability, high sensitivity, and high resoln.)
IT Lithography
(photo-, submicron, pos.-working photoresist compn. with durability, high sensitivity, and high resoln.)
IT 153698-48-7 153698-50-1 153698-51-2 153698-52-3
153698-54-5 153698-55-6 153698-56-7
153698-57-8 153698-62-5 153698-63-6 153840-05-2 159293-88-6
162744-66-3
(pos.-working photoresist compn. with durability, high sensitivity, and high resoln.)
IT 153698-53-4P 153698-58-9P 153698-65-8P. 161715-12-4P
(pos.-working photoresist compn. with durability, high sensitivity, and high resoln.)

L70 ANSWER 57 OF 65 HCA COPYRIGHT 2007 ACS on STN
122:201259 Positive-working photosensitive compositions. Aoso,
Toshiaki; Yamanaka, Tsukasa; Kokubo, Tadayoshi (Fuji Photo Film Co
Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06266107 A **19940922**
Heisei, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1993-49258 19930310.

GI



AB The title compns. contain a water-insol. and alkali-sol. resin, a compd. generating an acid by irradn. with active rays or radiations, and a dissoln. inhibitor with mol. wt. ≤ 3000 , whose solv. in developing solns. increases by acid, having ≤ 3 acid-decomposable groups branching from the same satd. C with ≥ 9 bonding atoms (except the decomposable group bonds) between the 2 decomposable groups in the farthest positions. A pos.-working resist comprising m-cresol-p-cresol-HCHO novolak resin, Ph₂I+.AsF₆- , and I gave high resoln. patterns with good profile by using a KrF excimer laser.

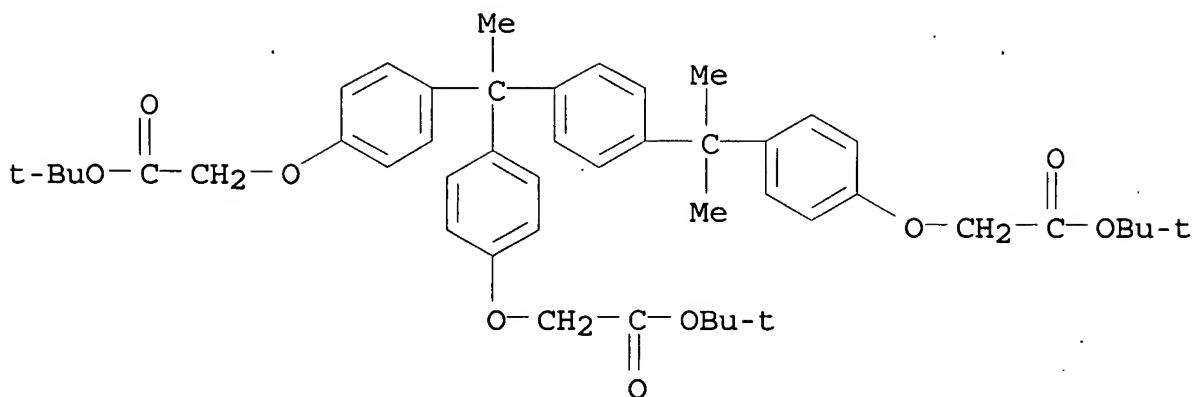
IT 153698-54-5 159293-89-7 160457-12-5

161715-10-2 161715-16-8

(dissoln. inhibitor; pos.-working photosensitive compns. contg. alkali-sol. resins, acid generators, and acid-decomp. dissoln. inhibitors)

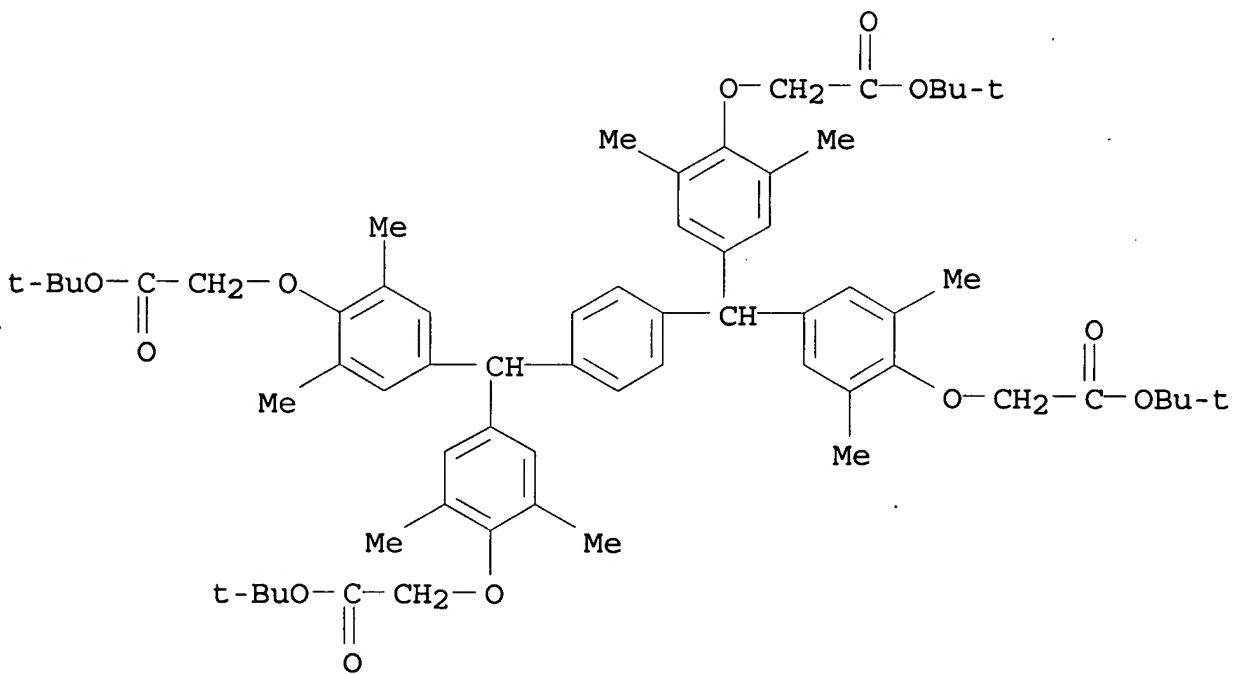
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



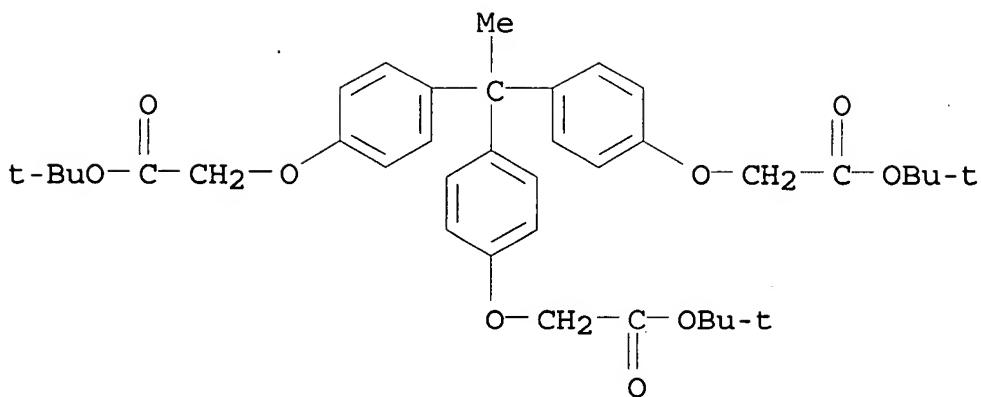
RN 159293-89-7 HCA

CN Acetic acid, 2,2',2'',2'''-[(1,4-phenylenedimethylidyne)tetrakis[(2,6-dimethyl-4,1-phenylene)oxy]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



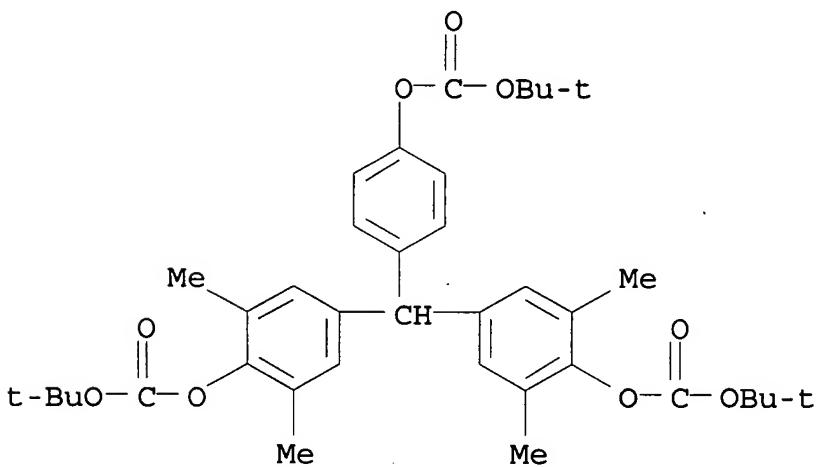
RN 160457-12-5 HCA

CN Acetic acid, 2,2',2''-[ethylidynetris(4,1-phenyleneoxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



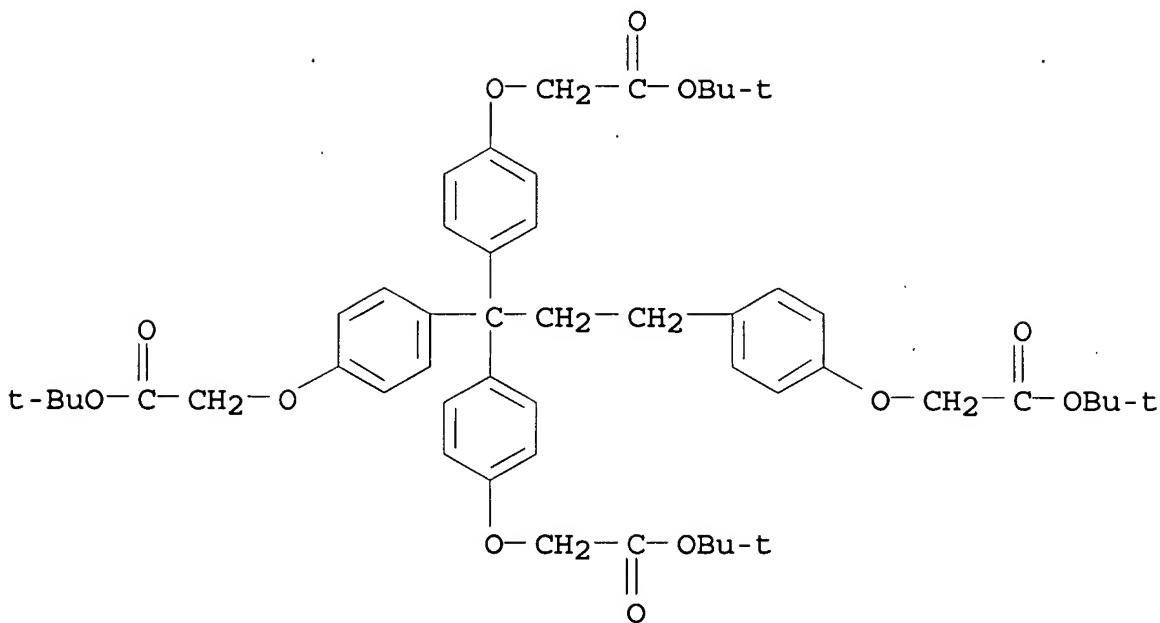
RN 161715-10-2 HCA

CN Carbonic acid, [[4-[(1,1-dimethylethoxy)carbonyloxy]phenyl]methylenbis(2,6-dimethyl-4,1-phenylene) bis(1,1-dimethylethyl) ester
 (9CI) (CA INDEX NAME)



RN 161715-16-8 HCA

CN Acetic acid, 2,2',2'',2'''-[1-propenyl-3-ylidynetetrakis(4,1-phenyleneoxy)]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI)
 (CA INDEX NAME)



- IC ICM G03F007-039
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos working **photoresist** dissoln inhibitor; alkali sol resin **photoresist**; acid generator **photoresist**
pos working
- IT **Resists**
(radiation-sensitive, pos.-working photosensitive compns. contg. alkali-sol. resins, acid generators, and acid-decomp. dissoln. inhibitors)
- IT 153698-53-4 153698-54-5 153698-64-7 159293-89-7
159293-90-0 160457-12-5 161715-10-2
161715-11-3 161715-12-4 161715-13-5 161715-14-6 161715-15-7
161715-16-8
(dissoln. inhibitor; pos.-working photosensitive compns. contg. alkali-sol. resins, acid generators, and acid-decomp. dissoln. inhibitors)

L70 ANSWER 58 OF 65 HCA COPYRIGHT 2007 ACS on STN

122:92625 Structural design of acid-decomposable dissolution inhibitors for a 3-components positive CA **resist**. Aoai, Toshiaki; Yamanaka, Tsukasa; Kokubo, Tadayoshi (Research Lab., Fuji Photo Film Co. Ltd., Shizuoka, 421-03, Japan). Proceedings of SPIE-The International Society for Optical Engineering, 2195(Advances in Resist Technology and Processing XI), 111-25 (English) 1994
CODEN: PSISDG. ISSN: 0277-786X.

AB A design of 3-components pos. chem. amplification (CA) **resist** system (consists of acid-decomposable low mol. dissoln. inhibitor / photo-acid generator (PAG) / phenolic resin binder) was investigated. A series of model inhibitors were newly synthesized and examd. for the structural influence to their inhibition efficiency on novolak (NVK) dissoln. The hydrophobicity and the mol. size of the inhibitor as well as the dispersivity of the acid decomposable groups in the mol. were found influential. By maximizing those parameters, the inhibitor with improved inhibition by three orders of magnitude compared to the previously known ones was obtainable. This even enabled the use of poly(p-hydroxystyrene) (PHS) as a binder, generally known to suffer from poor inhibition, in place of NVK. A mol. conformational anal. as well as IR spectrum anal. were carried out on the key materials for discussion of the inhibition mechanism. A mol. interaction model between the inhibitor and the hydrophilic site of binder, a similar model to DNQ-PAC / NVK system, was proposed for the mechanism. The 3-components **resist** samples formulated with simple phenolic binders and the improved inhibitor performed well on imaging under KrF excimer laser exposure. A 0.24 μm L/S image with vertical profile was obtainable.

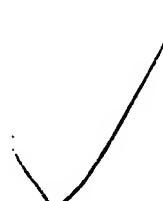
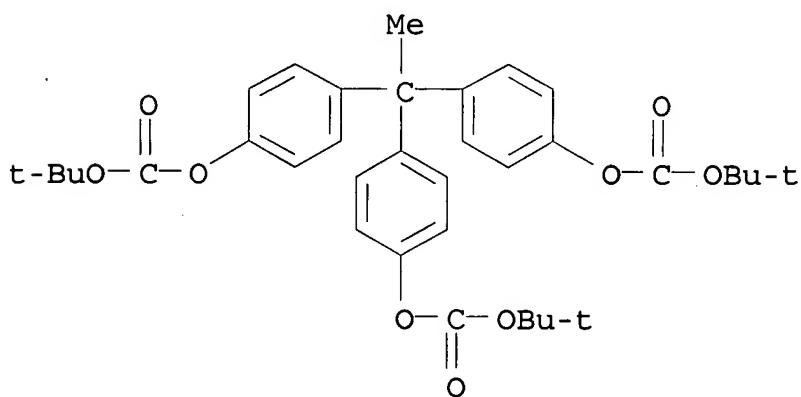
IT 143213-46-1P 151533-21-0P 153698-54-5P

160457-12-5P

(design and synthesis of acid-decomposable dissoln. inhibitors for 3-component pos. chem.-amplified **resist**)

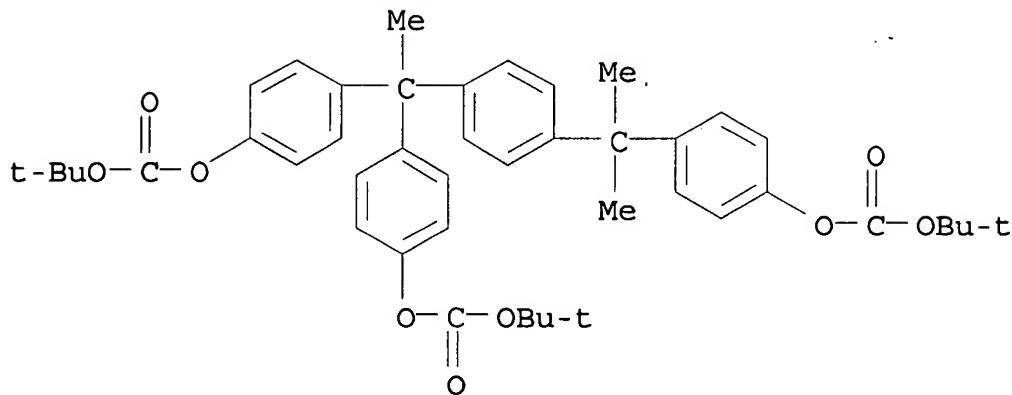
RN 143213-46-1 HCA

CN Carbonic acid, ethylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



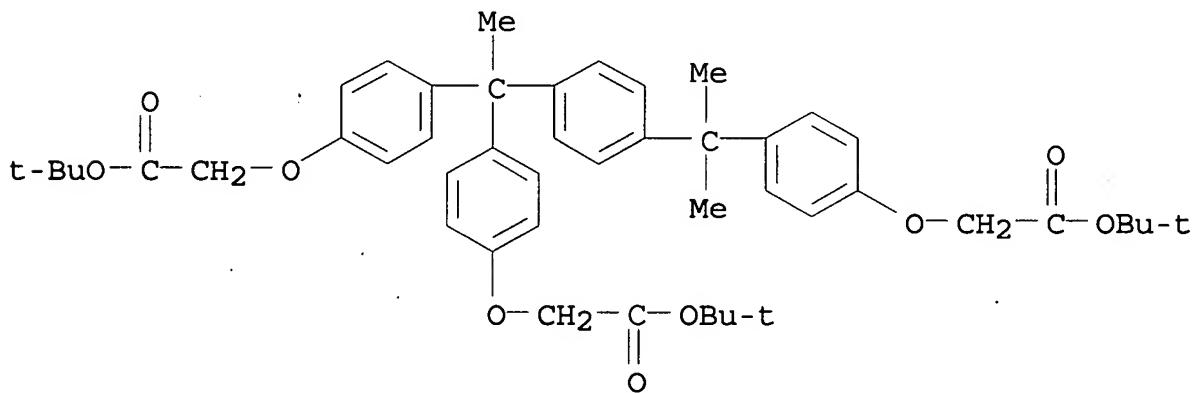
RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylpropyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



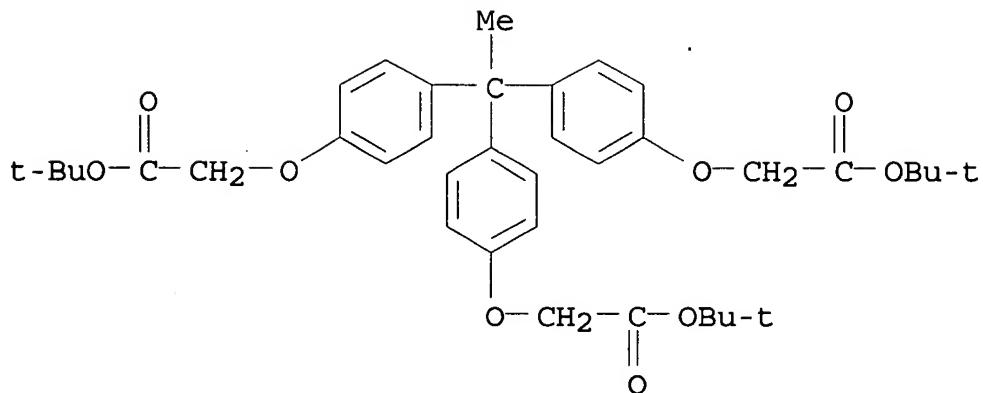
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 160457-12-5 HCA

CN Acetic acid, 2,2',2'''-[ethylidynetris(4,1-phenyleneoxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST acid decomposable dissoln inhibitor pos **photoresist**

IT Lithography

Resists

(photo-, design and synthesis of acid-decomposable dissoln. inhibitors for 3-component pos. chem.-amplified **resist**)

IT 6627-89-0P 36304-22-0P 117458-06-7P 139290-12-3P

143213-46-1P 145531-14-2P 146969-18-8P

151533-21-0P **153698-54-5P** 153698-58-9P

153698-62-5P 153698-63-6P 153698-64-7P 153698-65-8P

153840-05-2P 160457-02-3P 160457-03-4P 160457-04-5P

160457-05-6P 160457-06-7P 160457-07-8P 160457-08-9P

160457-09-0P 160457-10-3P 160457-11-4P **160457-12-5P**

(design and synthesis of acid-decomposable dissoln. inhibitors for 3-component pos. chem.-amplified **resist**)

L70 ANSWER 59 OF 65 HCA COPYRIGHT 2007 ACS on STN

121:312009 Three-component chemical amplification-type positive-working **resist** composition for high resolution and high sensitivity.

Aoso, Toshiaki; Yamanaka, Tsukasa; Uenishi, Kazuya; Kokubo, Tadayoshi (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06095390 A **19940408** Heisei, 59 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 1992-286045 19921023. PRIORITY: JP 1992-199689 19920727.

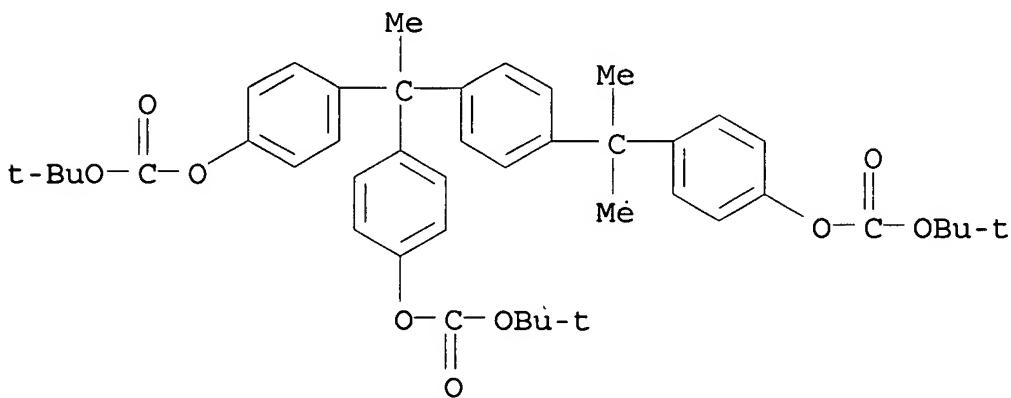
AB In the title compn. comprising an alk.-sol. resin, a photosensitive acid-generating compd., a dissoln. retarding agent for in an acid, the dissoln. retarding agent is a polycyclic arom. compd., ≥1 mol of which is a compd. contg. an alk.-sol. group.

IT **151533-21-0** **159293-89-7**

(three-component chem. amplification-type pos.-working **resist** compn.)

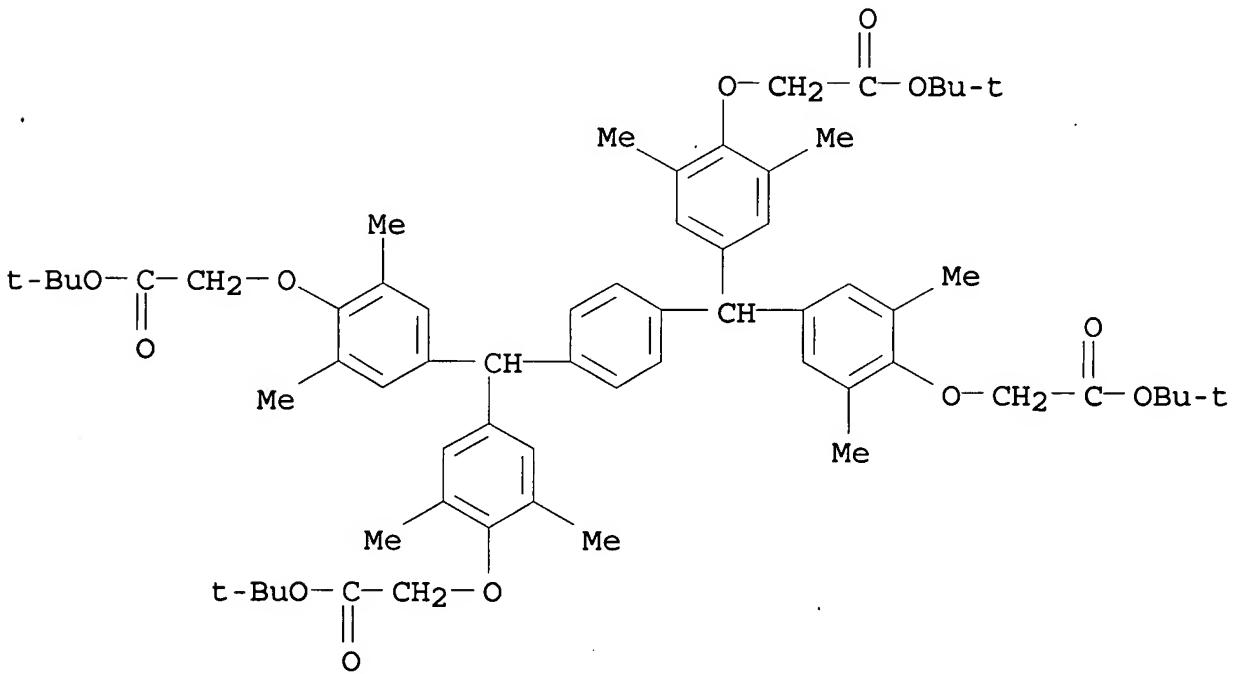
RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 159293-89-7 HCA

CN Acetic acid, 2,2',2'',2''''-[(1,4-phenylenedimethylidyne)tetrakis[(2,6-dimethyl-4,1-phenylene)oxy]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS G03F007-00; G03F007-004; G03F007-028; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and

ST Other Reprographic Processes)
 resist compn pos chem amplification
 IT Phenolic resins, uses
 (novolak, three-component chem. amplification-type pos.-working
 resist compn.)
 IT Resist
 (photo-, three-component chem. amplification-type pos.-working
 resist compn.)
 IT 136355-24-3DP, tetrahydropyranyl ethers 153840-05-2P
 159293-87-5P
 (three-component chem. amplification-type pos.-working
 resist compn.)
 IT 27029-76-1 57900-42-2 66003-78-9 112504-03-7 123236-78-2
 124737-97-9 142096-70-6 144089-15-6 151533-21-0
 153698-46-5 153698-52-3 153698-63-6 153698-64-7 153698-65-8
 153698-66-9 153698-67-0 159293-88-6 159293-89-7
 159293-90-0
 (three-component chem. amplification-type pos.-working
 resist compn.)

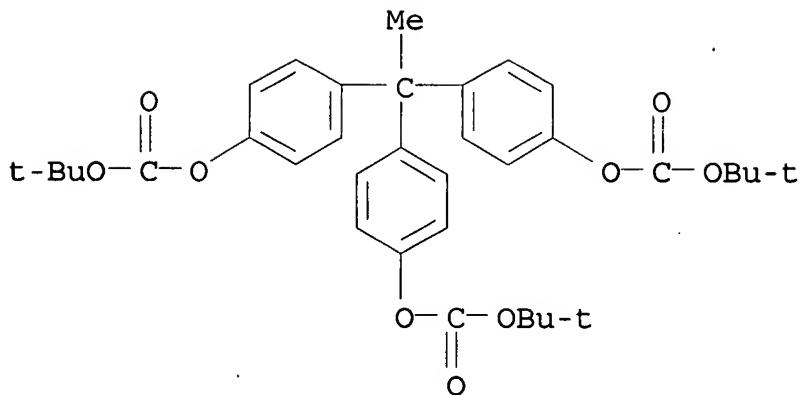
L70 ANSWER 60 OF 65 HCA COPYRIGHT 2007 ACS on STN
 120:232069 Resist coating composition. Murata, Makoto; Ota,
 Toshiyuki; Yumoto, Yoshiji; Miura, Takao (Japan Synthetic Rubber
 Co., Ltd., Japan). Eur. Pat. Appl. EP 562819 A2 19930929,
 30 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English).
 CODEN: EPXXDW. APPLICATION: EP 1993-302193 19930323. PRIORITY: JP
 1992-94956 19920323.

AB A pos. resist coating compn. comprises (a) an alkali-sol.
 resin, (b) at least one radiation-sensitive acid-forming agent
 selected from the group consisting of onium salts, halogen-contg.
 compds., sulfones, nitrobenzyl compds., and sulfonates, (c) a compd.
 which has the property of controlling the alkali solv. of the
 alkali-sol. resin and which is decompd. in the presence of an acid
 to develop either the property of reducing or losing the effect of
 controlling the alkali solv. of the alkali-sol. resin or the
 property of promoting the alkali solv. of the alkali-sol. resin, and
 (d) at least one solvent selected from Me 3-methoxypropionate and Et
 3-ethoxypropionate.

IT 143213-46-1 151533-21-0
 (pos. radiation-sensitive resist contg. alkali-sol.
 resins, acid-controlling agents and)

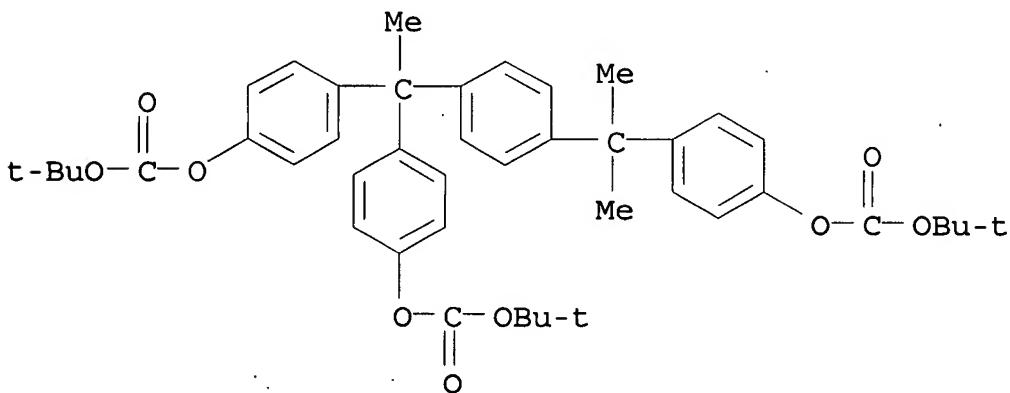
RN 143213-46-1 HCA

CN Carbonic acid, ethyldynetri-4,1-phenylene tris(1,1-dimethylethyl)
 ester (9CI) (CA INDEX NAME)



RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos resist acid forming agent; alkali sol resin pos
resist

IT Resist
(radiation-sensitive, pos.-working, contg. alkali-sol. resins,
acid-forming agents, and solv.-controlling agents)

IT 59269-51-1D, Poly(hydroxystyrene), acetyl-modified 59269-51-1D,
Poly(hydroxystyrene), tetrahydropyranyl-modified 59269-51-1D,
Poly(hydroxystyrene), trimethylgermyl-modified 59269-51-1D,
Poly(hydroxystyrene), trimethylsilyl-modified 59269-51-1D,
Poly(hydroxystyrene), tert-Bu acetate-modified 95418-59-0,
p-tert-Butoxystyrene-styrene copolymer

- (pos. radiation-sensitive **resists** contg. acid-forming agents, solv.-controlling agents and)
- IT 117458-06-7 127175-62-6 143213-46-1 151533-21-0
154218-37-8
(pos. radiation-sensitive **resists** contg. alkali-sol. resins, acid-controlling agents and)
- IT 97-64-3, Ethyl 2-hydroxypropionate 626-19-7, 1,3-Benzenedicarboxaldehyde 763-69-9, Ethyl 3-ethoxypropionate 3739-67-1 3852-09-3, Methyl 3-methoxypropionate 4324-39-4, Ethyl 2-methoxypropionate 138424-91-6 154218-38-9
(pos. radiation-sensitive **resists** contg. alkali-sol. resins, acid-forming agents, solv.-controlling agents and)
- IT 3406-03-9 3584-23-4 20444-09-1 66003-78-9 119666-27-2
126615-05-2
(pos. radiation-sensitive **resists** contg. alkali-sol. resins, solv.-controlling agents and)

L70 ANSWER 61 OF 65 HCA COPYRIGHT 2007 ACS on STN

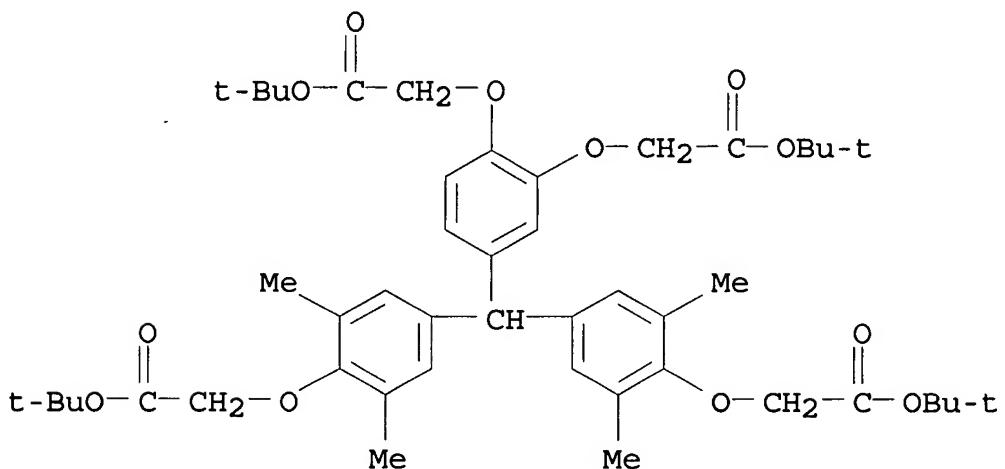
120:204700 Positive-type light-sensitive composition. Yamanaka, Tsukasa; Aoai, Toshiaki; Uenichi, Kazuya; Kondo, Shunichi; Kokubo, Tadayoshi (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 541112 A1 19930512, 81 pp. DESIGNATED STATES: R: BE, DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1992-119043 19921106. PRIORITY: JP 1991-319600 19911108; JP 1992-47705 19920205; JP 1992-47782 19920205; JP 1992-166685 19920603; JP 1992-299093 19921013.

AB A pos.-type light-sensitive compn. useful in manuf. of a lithog. plate or a semiconductor device and having less layer shrinkage by baking after exposing, less layer decrease in developing, a good profile, and a high resoln. comprises (a) a resin which is insol. in water and sol. in an alk. aq. soln., (b) a compd. which generates an acid by irradn. with active rays or radial rays, and (c) an acid-decomposable dissoln. inhibitor, having a mol. wt. of not more than 3000 and having groups decomposable by the action of the generated acid to increase the solv. of said inhibitor in an alk. developing soln., wherein said inhibitor (c) is at least one compd. selected from the group consisting of (i) compds. having two of said acid decomposable groups which are sepd. by 10 or more bonded atoms excluding the atoms constituting the acid decomposable groups and (ii) compds. having at least three of said acid decomposable groups and two of said groups which are at the farthest positions are sepd. by 9 or more bonded atoms excluding the atoms constituting the acid decomposable groups.

IT 153698-51-2 153698-54-5 153698-55-6
(pos. **photoresist** compns. contg. alkali-sol. resins, photosensitive acid generators and, for lithog. plate and semiconductor device manuf.)

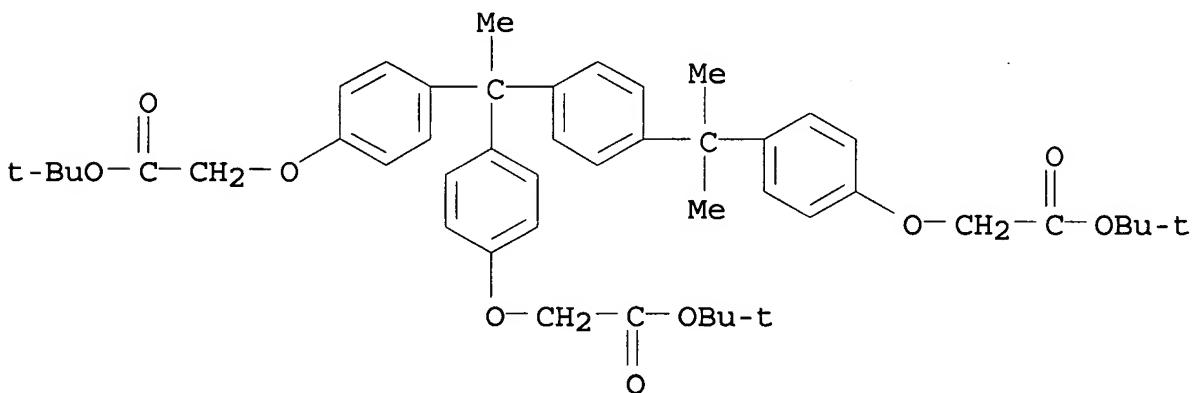
RN 153698-51-2 HCA

CN Acetic acid, 2,2'-[[4-[bis[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-3,5-dimethylphenyl]methyl]-1,2-phenylene]bis(oxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



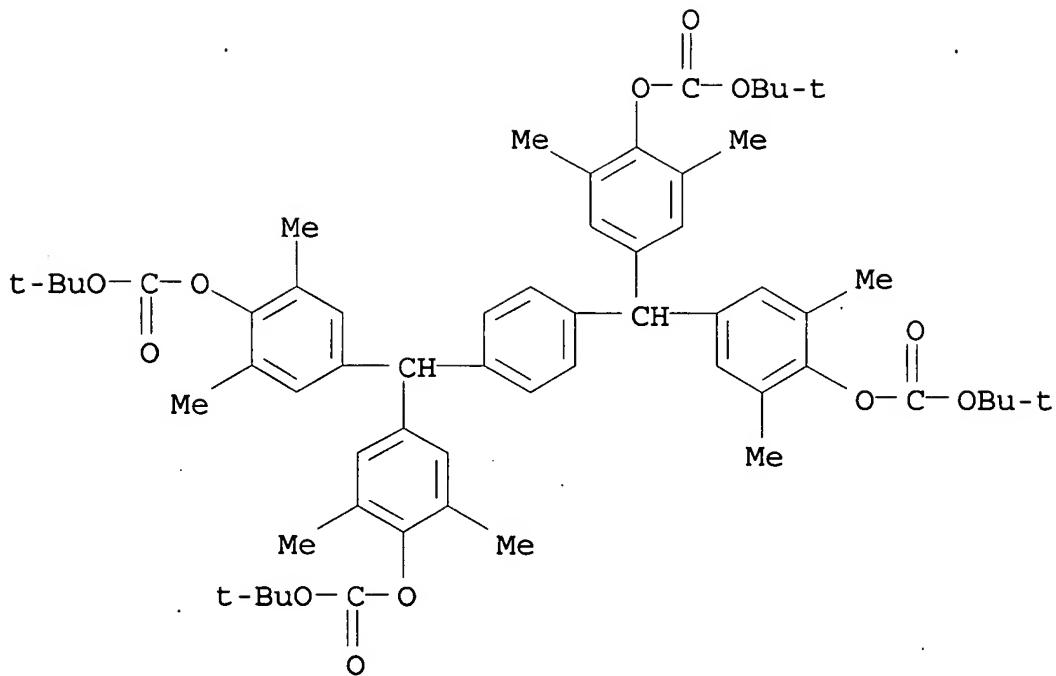
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



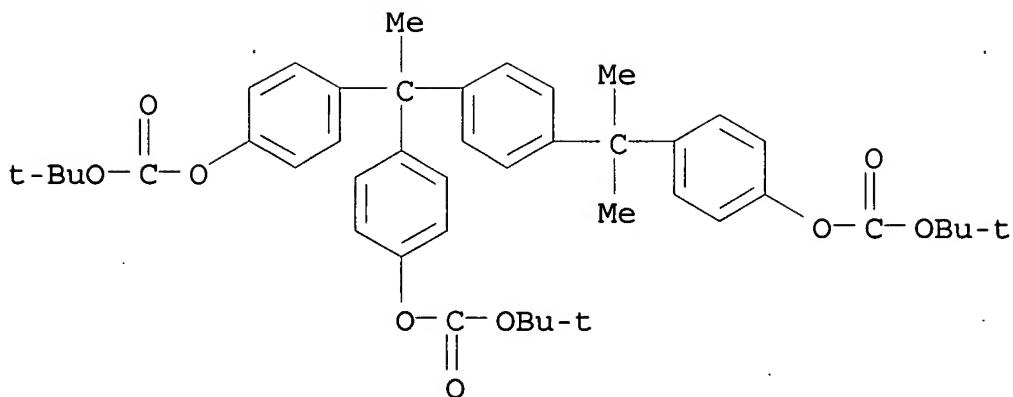
RN 153698-55-6 HCA

CN Carbonic acid, (1,4-phenylenedimethylidyne)tetrakis(2,6-dimethyl-4,1-phenylene) tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



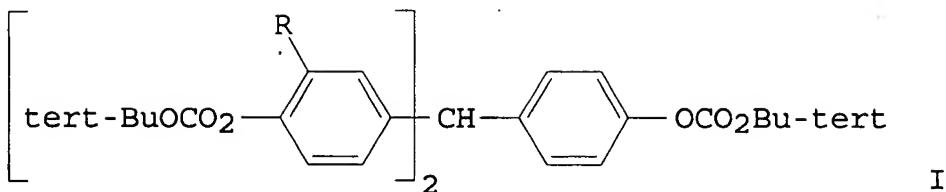
- IC ICM G03F007-004
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 IT Lithographic plates
 Semiconductor devices
 (manuf. of, pos. **photoresist** compns. contg.
 photosensitive acid generators, alkali-sol. resins, and
 acid-decomposable dissoln. inhibitors for)
 IT Phenolic resins, uses
 (novolak, pos. **photoresist** compns. contg.
 photosensitive acid generators, acid-decomposable dissoln.
 inhibitors and, for lithog. plate and semiconductor device
 manuf.)
 IT **Resists**
 (photo-, pos., contg. photosensitive acid generators, alkali-sol.
 resins, and acid-decomposable dissoln. inhibitors)
 IT 57900-42-2 59626-75-4 62613-15-4 66003-78-9 124737-97-9
 142096-70-6 153698-46-5 153698-66-9 153698-67-0
 (pos. **photoresist** compn. contg. alkali-sol. resins,
 acid-decomposable dissoln. inhibitors and, for lithog. plate and
 semiconductor device manuf.)
 IT 152238-74-9 153698-48-7 153698-49-8 153698-50-1
153698-51-2 153698-52-3 153698-53-4 **153698-54-5**
153698-55-6 153698-56-7 153698-57-8 153698-58-9
 153698-59-0 153698-60-3 153698-61-4 153698-62-5 153698-63-6

- 153698-64-7 153698-65-8 153840-05-2
 (pos. **photoresist** compns. contg. alkali-sol. resins,
 photosensitive acid generators and, for lithog. plate and
 semiconductor device manuf.)
- IT 24979-70-2, Poly(p-hydroxystyrene) 27029-76-1,
 m-Cresol-p-cresol-formaldehyde copolymer 112504-03-7 123236-78-2
 (pos. **photoresist** compns. contg. photosensitive acid
 generators, acid-decomposable dissoln. inhibitors and, for
 lithog. plate and semiconductor device manuf.)
- IT 153698-58-9P 153698-68-1P 153698-69-2P 153698-70-5P
 (prepn. and use of, as acid-decomposable dissoln. inhibitor for
 pos. **photoresist** compns.)
- IT 110-87-2, 3,4-Dihydro-2H-pyran 865-47-4 4466-18-6 5292-43-3,
 tert-Butylbromoacetate 24424-99-5, Di-tert-butyldicarbonate
 76937-83-2 110726-28-8 153698-47-6
 (reaction of, in prepg. acid-decomposable dissoln. inhibitor for
 pos. **photoresist** compns.)
- L70 ANSWER 62 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 120:204669 Positive-working **photoresist** compositions. Aoso,
 Toshiaki; Kokubo, Tadayoshi (Fuji Photo Film Co Ltd, Japan). Jpn.
 Kokai Tokkyo Koho JP 05158242 A 19930625 Heisei, 32 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-344112 19911203.
- AB The title compns. contain (a) a compd. which has ≥ 1 group
 decomposable by acids and of which the solv. in alk. developing
 solns. increases by the action of acids, (b) a compd. which
 generates an acid by irradn. with an active ray or radiation, and
 (c) a compd. which generates a base at $\geq 50^\circ$. The
 compns. show high sensitivity in deep-UV regions and are useful as
 high resoln. **photoresists**. Thus, a **photoresist**
 comprised (p-tert-BuOCO₂C₆H₄)₂CMe-p-C₆H₄CMe₂C₆H₄OCO₂Bu-tert-p,
 Ph₃S+.CF₃SO₃-, MeCPh:NOCONET₂, and a cresol-novolak resin, which
 gave a submicron pos. pattern by irradn. with far UV (254 nm).
- IT 151533-21-0
 (pos.-working **photoresist** contg.)
- RN 151533-21-0 HCA
- CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]
]-1-methylpropyl]phenyl]ethylidene]di-4,1-phenylene
 bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS G03F007-004; G03F007-027; G03F007-028; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST pos working **photoresist**; acid generating compd **photoresist**; base generating compd **photoresist**
 IT Phenolic resins, uses
 (novolak, pos.-working **photoresists** contg.)
 IT **Resists**
 (photo-, pos.-working, with high sensitivity and resoln.)
 IT 66003-78-9 91222-48-9
 (acid-generating agent, pos.-working **photoresist** contg.)
 IT 2911-38-8 21251-12-7 30289-16-8 45266-25-9 52266-32-7
 152238-75-0
 (base-generating agent, pos.-working **photoresist** contg.)
 IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer
 151533-21-0 152238-74-9
 (pos.-working **photoresist** contg.)

L70 ANSWER 63 OF 65 HCA COPYRIGHT 2007 ACS on STN
 120:148971 Acid-decomposable compounds and positive-working radiation-sensitive **resist** compositions using them.
 Umeda, Shinichi; Koyanagi, Takao; Kitaori, Tomoyuki; Fukunaga, Masanori; Nagasawa, Kotaro (Nippon Kayaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 05249681 A **19930928** Heisei, 6 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-31259 19920123.



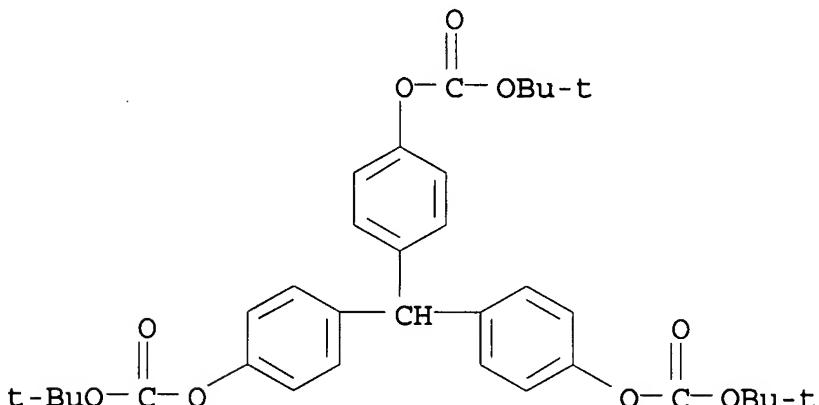
AB The title compds. have the general formula I ($R = H, Me$). The **resist** compns. comprise an alkali-sol. resin, a compd. which generates an acid by irradn., and I. The **resist** compns. show high sensitivity and provide high resln. patterns with good resistance to dry etching and heat and are useful for semiconductor devices. Thus, a **resist** was prep'd. by using I ($R = H$), m-cresol-p-cresol-novolak resin, and triphenylsulfonium trifluoromethanesulfonate.

IT 153041-55-5P 153041-56-6P

(prepn. of, acid-decomposable compd., pos.-working **resist** contg.)

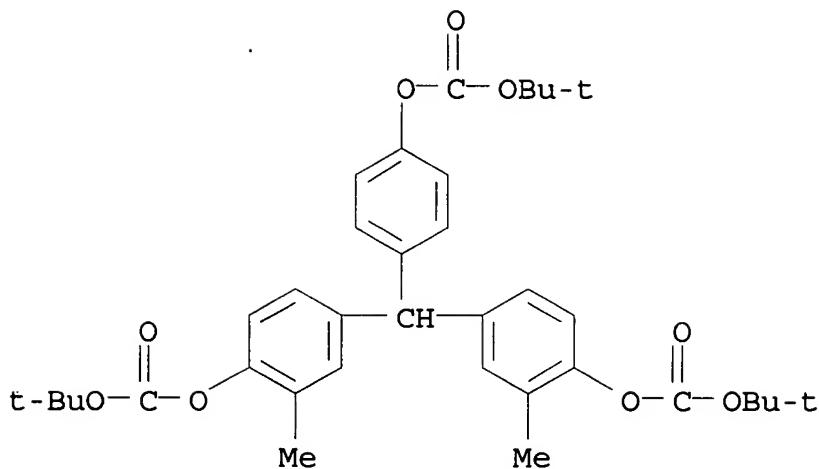
RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 153041-56-6 HCA

CN Carbonic acid, [[4-[[[(1,1-dimethylethoxy)carbonyloxy]phenyl]methylene]bis(2-methyl-4,1-phenylene) bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039
 ICS C08K005-10; C08L101-00; G03F007-004; G03F007-029; H01L021-027
 ICA C07C069-96
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST trisbutoxycarbonyloxyphenylmethane acid decomposable compd; pos working radiation sensitive **resist**
 IT Phenolic resins, uses
 (novolak, pos.-working **resist** from)
 IT **Resists**
 (radiation-sensitive, pos.-working, contg.
 trisbutoxycarbonyloxyphenylmethane as acid-decomposable compd.)
 IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9,
 Triphenylsulfonium trifluoromethanesulfonate 119666-27-2
 (acid generator, pos.-working **resist** contg.)
 IT 25213-61-0, Monomethyl maleate-styrene copolymer 27029-76-1,
 m-Cresol-p-cresol-formaldehyde copolymer 59269-51-1,
 Poly(vinylphenol)
 (pos.-working **resist** from)
 IT 153041-55-5P 153041-56-6P
 (prepn. of, acid-decomposable compd., pos.-working **resist**
 contg.)

L70 ANSWER 64 OF 65 HCA COPYRIGHT 2007 ACS on STN
 119:282254 Positive-working **photoresist** composition. Aoai,
 Toshiaki; Kokubo, Tadayoshi (Fuji Photo Film Co., Ltd., Japan).
 Eur. Pat. Appl. EP 535653 A1 19930407, 32 pp. DESIGNATED
 STATES: R: BE, DE, FR, GB. (English). CODEN: EPXXDW.
 APPLICATION: EP 1992-116774 19920930. PRIORITY: JP 1991-253523
 19911001.

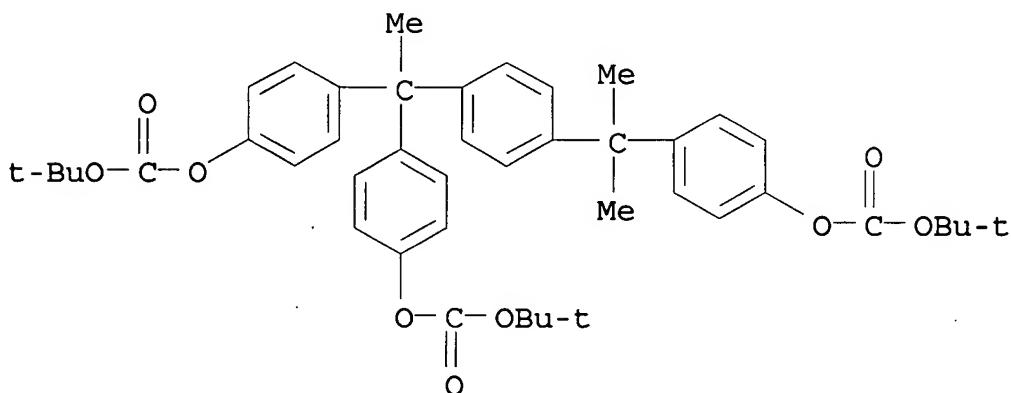
AB A pos.-working **photoresist** compn. exhibiting high sensitivity, good adaptability to short-wavelength light sources, and excellent resln. comprises 5-99.40 wt.% of a resin sol. in an alk. soln., 0.01-20 wt.% of a disulfone compd. represented by the formula R₁(SO₂)₂R₂ (R₁,R₂ = substituted or unsubstituted alkyl, alkenyl, or aryl), and 0.5-80 wt.% of a compd. which has ≥ 1 group capable of being decompd. by an acid and whose solv. in an alk. soln. is increased by the present of an acid and the compd. has a mol. wt. ≤ 2000 and a b.p. $> 150^\circ$, wherein a 1- μm thick film of the **photoresist** compn. has an optical d. ≤ 1.4 detd. at 248 nm and its value is reduced upon exposure to light of 248 nm.

IT 151533-21-0

(pos.-working **photoresist** contg. disulfones, alkali-sol. resins and)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos **photoresist** disulfone acid decomposable compd

IT Phenolic resins, uses

(novolak, pos.-working **photoresist** contg. disulfones, acid-decomposable compds. and)

IT **Resists**

(photo-, pos.-working, contg. disulfones, alkali-sol. resins, and acid-decomposable compds.)

IT 91222-47-8 91222-48-9 91222-49-0 91222-51-4 91222-52-5
141425-66-3

(pos.-working **photoresist** contg. alkali-sol. resins, acid-decomposable compds. and)

- IT 151533-20-9 151533-21-0
 (pos.-working photoresist contg. disulfones,
 alkali-sol. resins and)
- IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer
 (pos.-working photoresists contg. disulfones,
 acid-decomposable compds. and)

L70 ANSWER 65 OF 65 HCA COPYRIGHT 2007 ACS on STN

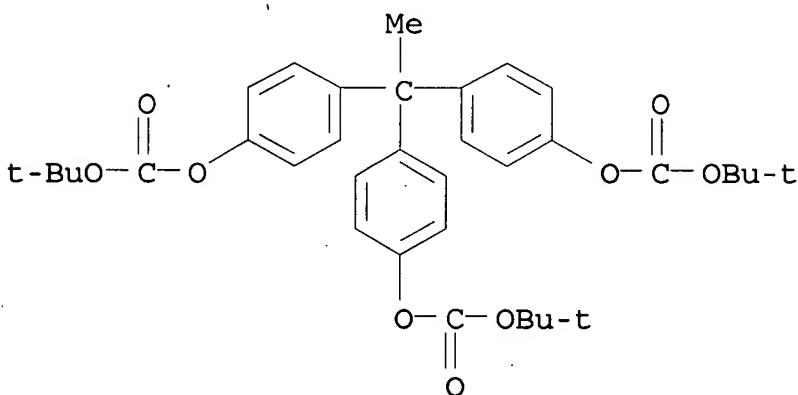
117:140434 Hexafluoroacetone in resist chemistry: A versatile new concept for materials for deep UV lithography. Przybilla, K. J.; Roeschert, H.; Pawlowski, G. (Hoechst AG, Frankfurt/Main, D-6230/80, Germany). Proceedings of SPIE-The International Society for Optical Engineering, 1672(Adv. Resist Technol. Process. IX), 500-12 (English) 1992. CODEN: PSISDG. ISSN: 0277-786X.

AB Starting from general arguments on hexafluoroacetone chem. an exploratory investigation of the utility of this new type of resist chem. is presented. The 2-hydroxyhexafluoroisopropyl-group (HHFIP) proves to be comparable to phenolic groups in respect to acidity and reactivity. Polymers contg. HHFIP-moieties are highly transparent alkali-sol. binder materials for functional group deprotection type, dissoln. inhibition type, and crosslinking type photoresist materials. Dissoln. inhibitors contg. the HHFIP-function show superior inhibition properties due to strong hydrogen bond interaction with the matrix polymer.

IT 143213-46-1
 (lithog. characterization of resist system contg., for deep-UV exposure)

RN 143213-46-1 HCA

CN Carbonic acid, ethylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST hexafluoroacetone chem lithog resist deep UV;

- IT hydroxyhexafluoroisopropyl group styrene polymer **photoresist**
Resists
(photo-, for deep-UV lithog., polymers contg.
hydroxyhexafluoroisopropyl-group as, hexafluoroacetone chem. for)
- IT 23358-99-8 71149-15-0 117458-06-7 139254-88-9 143213-43-8
143213-44-9 143213-45-0 143213-46-1 143336-94-1
(lithog. characterization of **resist** system contg., for
deep-UV exposure)
- IT 3089-11-0
(**photoresist** for deep-UV exposure contg.
hexafluoroacetone-modified polystyrene and triphenylsulfonium
triflate and, characteristics of)
- IT 66003-78-9, Triphenylsulfonium triflate
(**photoresist** material contg. hexafluoroacetone-modified
polystyrene and)
- IT 9003-53-6
(reaction of, with hexafluoroacetone, in sepn. of lithog.
photoresist for deep-UV exposure)
- IT 684-16-2, Hexafluoroacetone
(reaction of, with polystyrene, in sepn. of lithog.
photoresist material for deep-UV exposure)
- IT 85947-64-4 116352-29-5
(sepn. of, for **photoresist** system for deep-UV lithog.)

SEARCH REQUEST FORM

Scientific and Technical Information Center

#1

Sm J. Lee

Requester's Full Name: JOHN S. LEE Examiner #: 76060 Date: 4-30-07Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 101531, 208Mail Box and Bldg/Room Location: 9C15 Results Format Preferred (circle): PAPER DISK E-MAIL

(Rem.)

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Pt. See Bib

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search for the compound of formula (1) in cl. #1

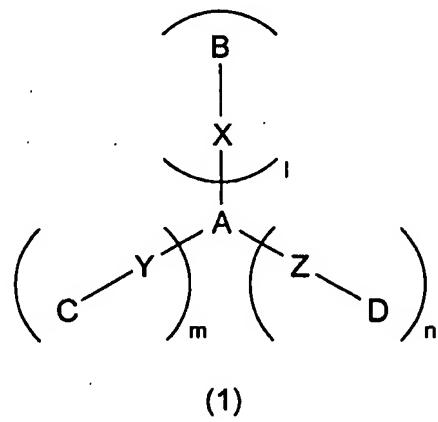
STAFF USE ONLY		Type of Search	Vendors and cost where applicable
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Searcher Phone #:	_____	AA Sequence (#)	Dialog _____
Searcher Location:	_____	Structure (#)	Questel/Orbit _____
Date Searcher Picked Up:	_____	Bibliographic	Dr.Link _____
Date Completed:	<u>5-10-07</u>	Litigation	Lexis/Nexis _____
Searcher Prep & Review Time:	_____	Fulltext	Sequence Systems _____
Clerical Prep Time:	_____	Patent Family	WWW/Internet _____
Online Time:	_____	Other	Other (specify) _____

Amendments to the Claims:

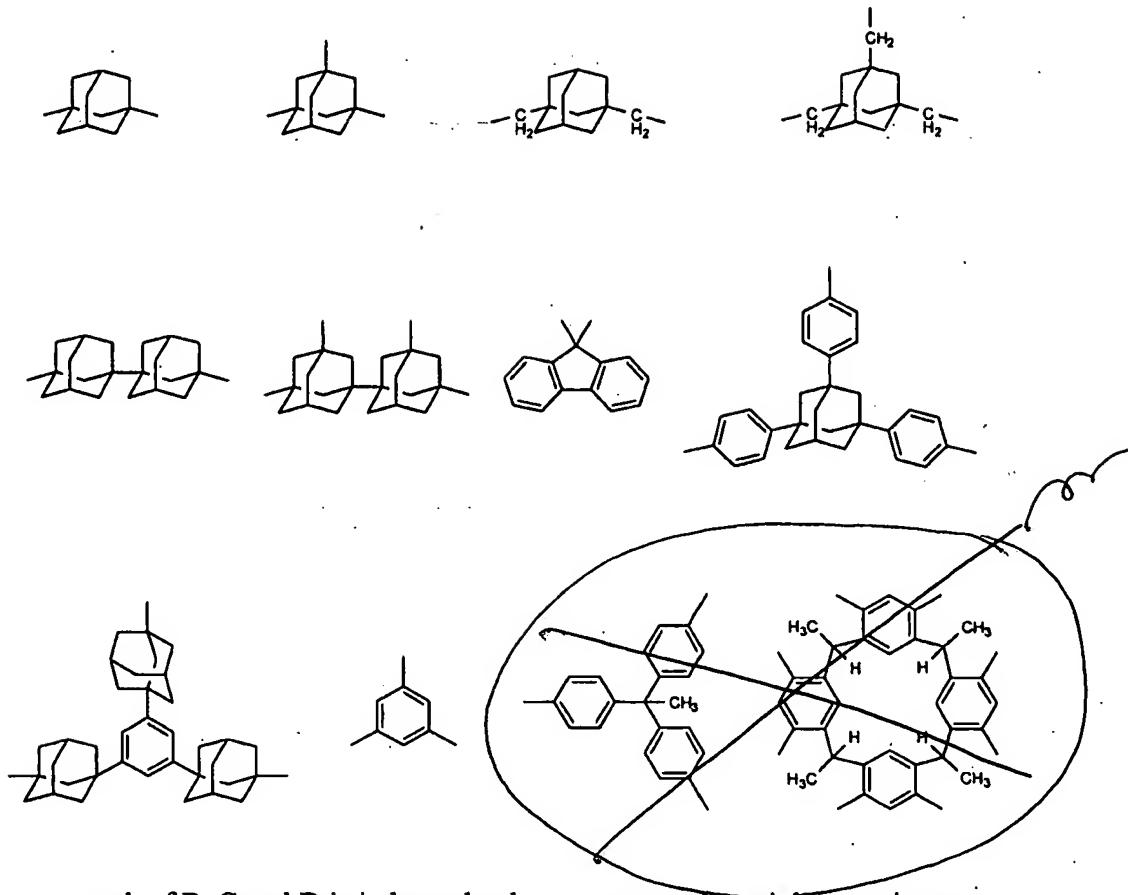
This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

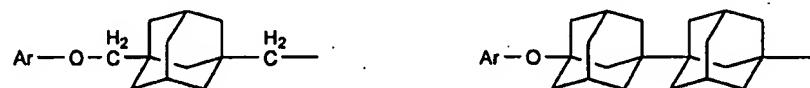
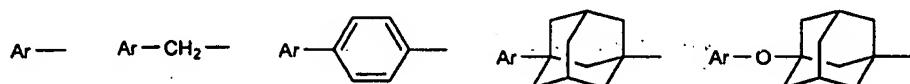
Claim 1 (original): A photoresist base material comprising an extreme ultra-violet reactive organic compound represented by the following general formula (1),



wherein A is an organic group represented by



each of B, C and D is independently an extreme ultra-violet reactive group, a group having reactivity to the action of chromophore active to extreme ultra-violet or an organic group represented by

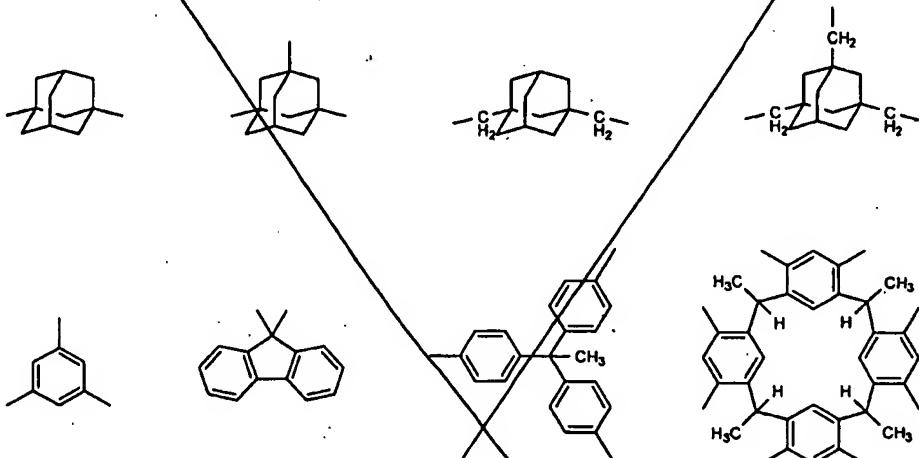


wherein Ar is a phenyl or naphthyl group substituted with RO- and/or ROCO- in which R, RO- and ROCO are extreme ultra-violet reactive groups or groups having reactivity to the action of a chromophore active to extreme ultra-violet,

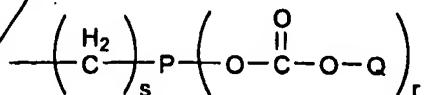
each of X, Y and Z is independently a single bond or an ether bond, and
 $1 + m + n = 2, 3, 4 or 8.$

~~Claim 2 (original): The photoresist base material as recited in claim 1, wherein said extreme ultra-violet reactive organic compound is in an amorphous state at room temperature and has a molecule whose average diameter is 2 nm or less.~~

~~Claim 3 (original): The photoresist base material as recited in claim 1, wherein A is an organic group represented by~~



~~each of B, C and D is a hydrogen atom, tert-butyl, tert-butyloxycarbonylmethyl, tert-butyloxycarbonyl, 1-tetrahydropyranyl, 1-tetrahydrofuryl, 1-ethoxyethyl, 1-phenoxyethyl, an organic group represented by~~



~~in which P is an aromatic group having a valence of $(r + 1)$ and having 6 to 20 carbon atoms, Q is an organic group having 4 to 30 carbon atoms, r is an integer of 1 to 10 and s is an integer of 0 to 10,~~

~~or an organic group represented by~~



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Bib Data Sheet

CONFIRMATION NO. 6424

SERIAL NUMBER 10/531,208	FILING OR 371(c) DATE 04/14/2005 RULE	CLASS 430	GROUP ART UNIT 1756	ATTORNEY DOCKET NO. 28955.1048
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APPLICANTS

Mitsuru Ueda, Tokyo, JAPAN;
 Hirotoshi Ishii, Chiba, JAPAN;

** CONTINUING DATA *****

This application is a 371 of PCT/JP03/11137 09/01/2003

** FOREIGN APPLICATIONS *****

JAPAN 2002300144 10/15/2002
 JAPAN 2003112458 04/17/2003

Foreign Priority claimed	<input type="checkbox"/> yes <input type="checkbox"/> no	STATE OR COUNTRY JAPAN	SHEETS DRAWING	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 3
35 USC 119 (a-d) conditions met	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> Met after Allowance				
Verified and Acknowledged	Examiner's Signature	Initials			

ADDRESS

27890

TITLE

Photoresist base material, method for purification thereof, and photoresist compositions

FILING FEE RECEIVED 900	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit
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L4 198 S 638.8.1/RID
L5 STR
L6 15 S L5
L7 257 S 1839.6.36/RID

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L9 108589 S L7
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L13 570 S L11 AND L12
L14 5993 S UEDA M?/AU
L15 4713 S ISHII H?/AU
L16 28 S L14 AND L15
L17 13402 S PHOTORESIST?/TI
L18 4 S L16 AND L17
SEL L18 1-4 RN

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LEE 10/531,208

Page 2

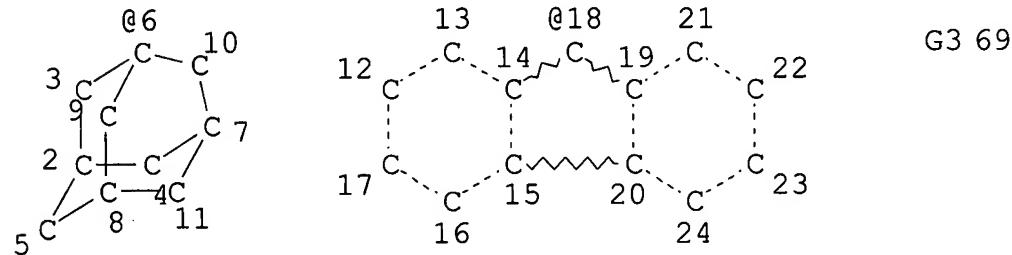
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L40 192166 S RESIST OR RESISTS OR PHOTORESIST? OR MASK? OR PHOTOMASK
L41 12 S (L37 OR L38) AND L40
L42 13 S L39 AND L40
L43 13 S L41 OR L42
L44 38 S L39 NOT L43
L45 9 S 1840-2002/PY, PRY AND L43
L46 24 S 1840-2002/PY, PRY AND L44

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GRAPH ATTRIBUTES:

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NUMBER OF NODES IS 24

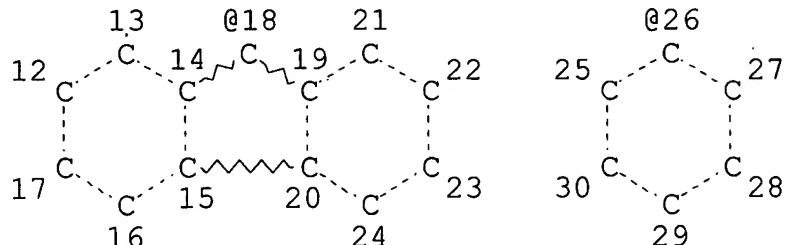
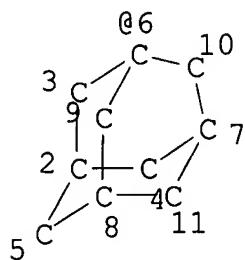
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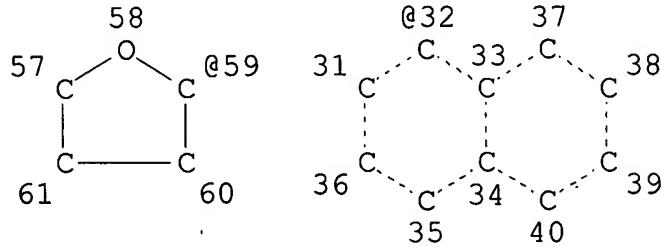
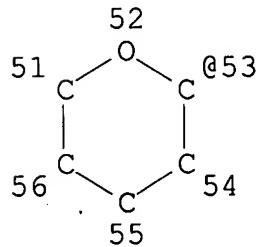
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Cb~O~CH2
63 64 @65

t-BuO @46

G2 67

G3 69

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VAR G2=46/50/65/53/59

VAR G3=6/18.

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GGCAT IS UNS AT 63
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

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NUMBER OF NODES IS 61

STEREO ATTRIBUTES: NONE

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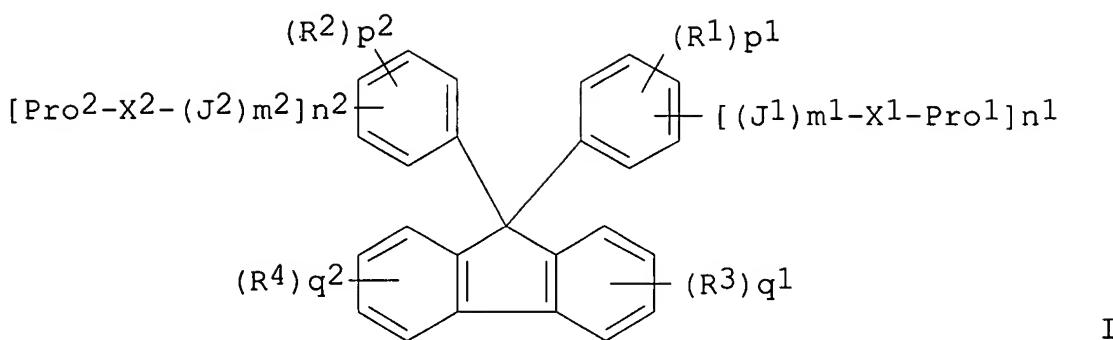
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=> D L45 1-9 CBIB ABS HITSTR HITIND

L45 ANSWER 1 OF 9 HCA COPYRIGHT 2007 ACS on STN
140:397371 Fluorenes as additives for photosensitive resin compositions
for **resists**. Murase, Hiroaki; Yamada, Mitsuaki; Suda,
Yasuhiro; Ogata, Kazuyuki; Hanahata, Makoto; Sato, Masahiro (Osaka
Gas Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004137262 A
20040513, 36 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
2003-328520 20030919. PRIORITY: JP 2002-284298 20020927.

GI



AB The fluorenes are I (J1, J2 = linkage; X1Pro, X2Pro = hydrophilic groups bearing leaving protective groups; R1-R4 = alkyl, alkenyl, alkoxy, etc.; m1, m2 = 0, 1; n1, n2, p1, p2, q1, q2 = 0-4; n1 and/or n2 = 1-4; n1 + p1 ≤ 5; n2 + p2 ≤ 5). The fluorenes show high sensitivity to short-wavelength light, e.g., KrF excimer laser, and increase solv. difference between exposed and unexposed parts, achieving **resists** producing high-resoln. patterns.

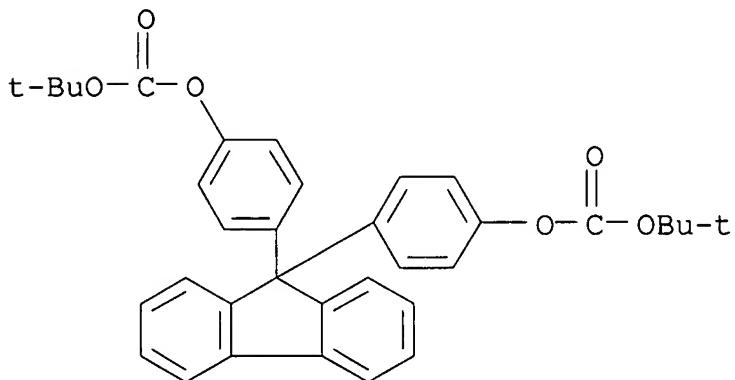
IT 469858-95-5P 469859-65-2P 469859-71-0P

685867-41-8P

(fluorenes as additives for excimer laser-sensitive pos.
photoresists producing high-resoln. patterns)

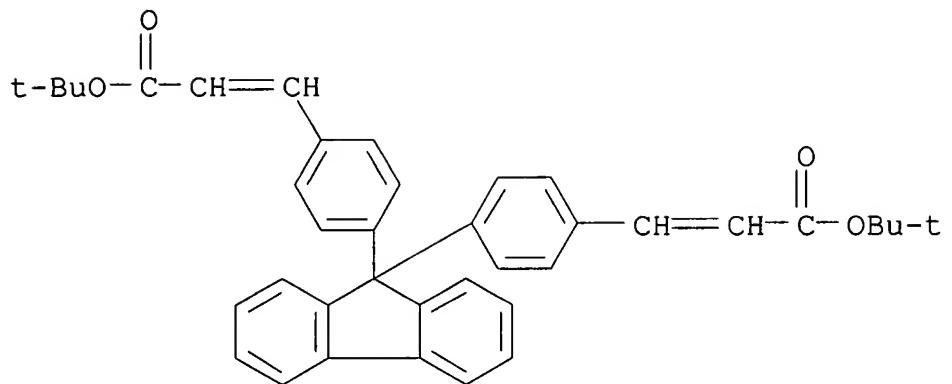
RN 469858-95-5 HCA

CN Carbonic acid, 9H-fluoren-9-ylidenedi-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



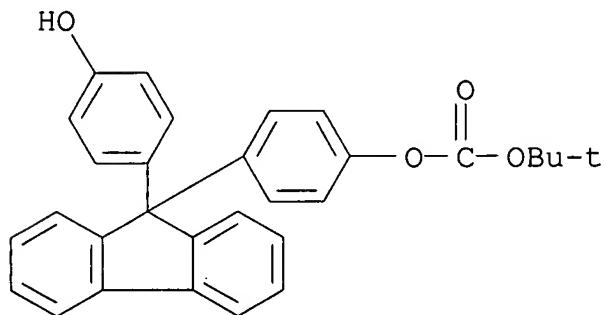
RN 469859-65-2 HCA

CN 2-Propenoic acid, 3,3'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



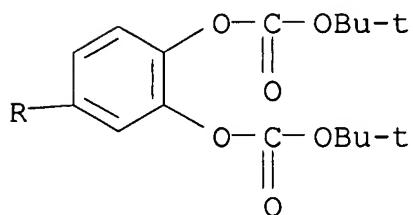
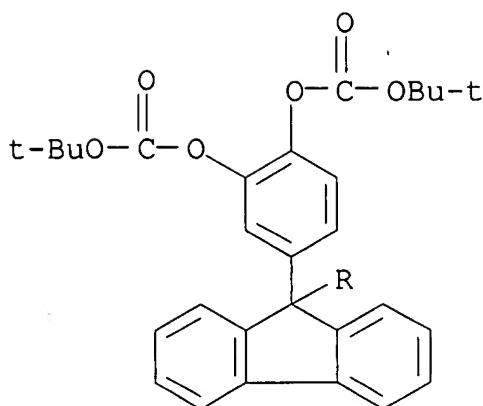
RN 469859-71-0 HCA

CN Carbonic acid, 1,1-dimethylethyl 4-[9-(4-hydroxyphenyl)-9H-fluoren-9-yl]phenyl ester (9CI) (CA INDEX NAME)



RN 685867-41-8 HCA

CN Carbonic acid, 9H-fluoren-9-ylidenedi-4,1,2-benzenetriyl tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM C07C043-21
 ICS C07C069-96; C07C309-65; C09B011-00; G03F007-004; G03F007-039
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 25, 38
 ST fluorene additive pos **photoresist** excimer laser;
 ethoxyethoxyphenylfluorene polyvinylphenol pos excimer laser
photoresist
 IT **Photoresists**
 (UV, vacuum-UV; fluorenes as additives for excimer
 laser-sensitive pos. **photoresists** producing
 high-resoln. patterns)
 IT Positive **photoresists**
 (fluorenes as additives for excimer laser-sensitive pos.
 photoresists producing high-resoln. patterns)
 IT 469858-95-5P 469859-35-6P **469859-65-2P**
 469859-71-0P 685867-40-7P **685867-41-8P**
 (fluorenes as additives for excimer laser-sensitive pos.
 photoresists producing high-resoln. patterns)
 IT 218769-04-1P 351521-78-3P
 (fluorenes as additives for excimer laser-sensitive pos.
 photoresists producing high-resoln. patterns)
 IT 109-92-2, Ethyl vinyl ether 120-80-9, Catechol, reactions
 358-23-6, Trifluoromethanesulfonic acid anhydride 486-25-9,

9-Fluorenone 1663-39-4, tert-Butyl acrylate 3236-71-3,
 9,9-Bis(4-hydroxyphenyl)fluorene 24424-99-5, Di-tert-butyl
 dicarbonate 88938-12-9

(fluorenes as additives for excimer laser-sensitive pos.
photoresists producing high-resoln. patterns)

IT 59269-51-1D, Vinylphenol homopolymer, 1-ethoxyethyl ether
 155214-68-9, Vinylphenol homopolymer tert-butoxycarboxylate
 (fluorenes as additives for excimer laser-sensitive pos.
photoresists producing high-resoln. patterns)

L45 ANSWER 2 OF 9 HCA COPYRIGHT 2007 ACS on STN

140:383102 **Photoresist** base material, method for purification
 thereof, and **photoresist** compositions containing the same.

Ueda, Mitsuru; Ishii, Hirotoshi (Idemitsu Kosan Co., Ltd., Japan).
 PCT Int. Appl. WO 2004036315 A1 20040429, 56 pp. DESIGNATED STATES:
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM,
 HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
 LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,
 RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
 US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI,
 CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE,
 NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.

APPLICATION: WO 2003-JP11137 20030901. PRIORITY: JP 2002-300144
 20021015; JP 2003-112458 20030417.

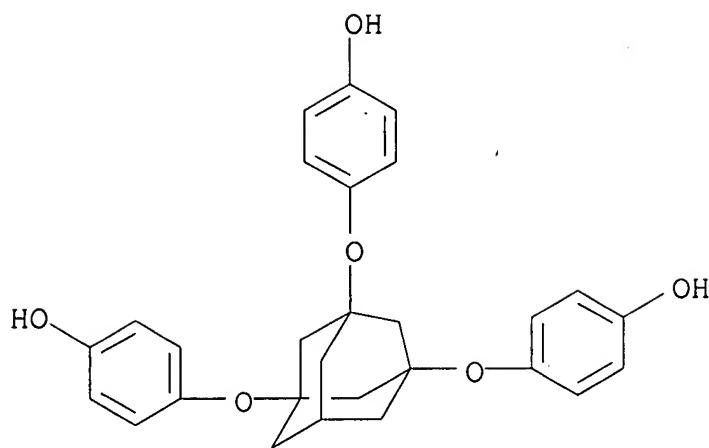
AB The invention relates to **photoresist** base materials
 consisting of extreme UV sensitive-org. compds. represented by the
 general formula (B-X)₁(C-Y)_m(D-Z)_nA: [wherein A is a central
 structure consisting of an aliph. group having C1-50, an arom. group
 having C6-50 carbon, an org. group bearing both, or an org. group
 having a cyclic structure formed by repetition of these groups; B to
 D are each an extreme UV sensitive group, a group exhibiting a
 reactivity on the action of a chromophore sensitive to extreme UV
 rays, a C1-50 aliph. or C6-50 arom. group having such a group, an
 org. group having both groups, or a substituent having a branched
 structure; X to Z are each a single bond or an ether linkage; l to n
 are integers of 0-5 satisfying the relationship: l + m + n <u>></u>
 1; and A to D may each have a heteroatom-bearing substituent]. The
 invention provides **photoresist** base materials and
photoresist compns. which enable ultrafine lithog. with
 extreme UV rays or the like and is suitable for use in semiconductor
 device fabrication.

IT 683227-72-7P 683227-73-8P

(**photoresist** base material, method for purifn. thereof,
 and **photoresist** compns. contg. the same)

RN 683227-72-7 HCA

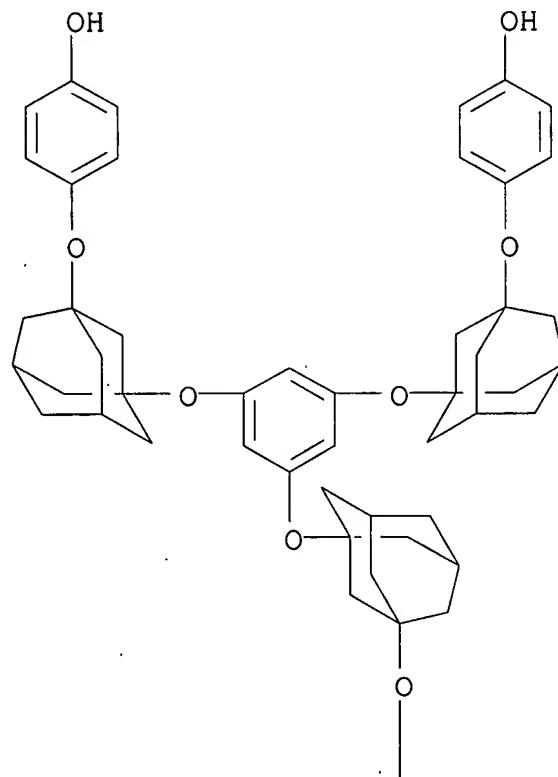
CN Phenol, 4,4',4''-[tricyclo[3.3.1.13,7]decane-1,3,5-
 triyltris(oxy)]tris- (9CI) (CA INDEX NAME)



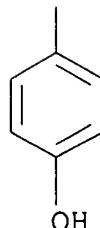
RN 683227-73-8 HCA

CN Phenol, 4,4',4''-[1,3,5-benzenetriyltris(oxytricyclo[3.3.1.13,7]deca
ne-3,1-diyloxy)]tris- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



- IC ICM G03F007-039
ICS C07C039-17; C07C069-736; C07D309-04
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST **photoresist** compn
IT Light-sensitive materials
 Photoresists
 Recrystallization
 Semiconductor device fabrication
 (**photoresist** base material, method for purifn. thereof,
 and **photoresist** compns. contg. the same)
IT Distillation
 (vacuum; **photoresist** base material, method for purifn.
 thereof, and **photoresist** compns. contg. the same)
IT 65338-98-9DP, tetrahydropyranyl and benzyl deriv. ethers
125748-07-4P, Calix[4]resorcinarene 211427-64-4P
683227-72-7P 683227-73-8P 683227-74-9P
683227-75-0P 683227-76-1P
 (**photoresist** base material, method for purifn. thereof,
 and **photoresist** compns. contg. the same)
IT 75-07-0, Acetaldehyde, reactions 108-46-3, Resorcinol, reactions
110-87-2, Dihydro-2H-pyran 623-05-2, 4-Hydroxybenzyl alcohol
1927-95-3, 4-Bromophenyl acetate 5001-18-3, 1,3-
Dihydroxyadamantane 5292-43-3, tert-Butyl bromoacetate
24424-99-5, Di-tert-butyl dicarbonate 27955-94-8 29654-55-5,
3,5-Dihydroxybenzylalcohol 99181-50-7, 1,3,5-Trihydroxyadamantane
 (**photoresist** base material, method for purifn. thereof,
 and **photoresist** compns. contg. the same)
IT 156281-11-7P, 4-(tert-Butoxycarbonyloxy)benzylalcohol
 (**photoresist** base material, method for purifn. thereof,
 and **photoresist** compns. contg. the same)

L45 ANSWER 3 OF 9 HCA COPYRIGHT 2007 ACS on STN

139:60427 Photopolymerizable carboxyl-terminated bisphenol fluorene
epoxy (meth)acrylate-based unsaturated resins, their preparation,

and their compositions. Fujii, Satoru; Yanagihara, Yoshihisa; Kitano, Kei (Nagase Chemtex Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2003176343 A 20030624, 17 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 2001-377510 20011211.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The resins have Mn \geq 1500 and are represented by general formula HO₂YC₂[X₁O₂CZ(CO₂H)₂CO₂]₁[X₂O₂CZ(CO₂H)₂CO₂]_mXO₂CYCO₂H where X₁ and X₂ are derived from 9,9-bis[[4-[3'-(meth)acryloyloxy-2'-hydroxypropoxy]-3-R]phenyl]fluorene [I, II; in I, R = R₁, in II, R = R₃; R₁, R₃ = H, C₁-5 alkyl, Ph halo; R₁ \neq R₃], X = X₁ or X₂, 1/m = 1/99-99/1, 1 + m = 1-20 integer, and Z, Y = residue removing acid anhydride groups from dicarboxylic acid anhydrides (III) and tetracarboxylic acid dianhydrides (IV); I and II are reacted with III, then with IV; molar ratio of III:IV = 1:99-65:35. The compns. contain (A) the resins, (B) epoxides, (C) photopolymn. initiators, and optionally (D) \geq 1 photopolymerizable monomers and/or oligomers \leq 50 parts per 100 parts A. The compns. give films having good heat resistance, transparency, adhesion strength, chem. resistances, etc., and are useful for protection films or interlayer dielects. of color filters, LCD, IC, solid image pickup devices, color **resist** binders, solder **resists**, etc.

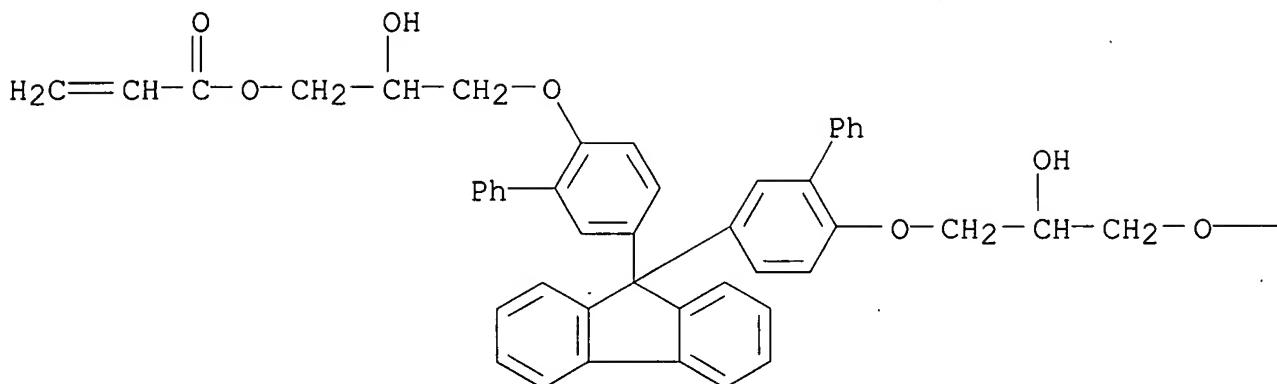
IT 405316-31-6P

(prepn. of photopolymerizable HO₂C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)

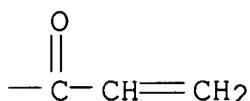
RN 405316-31-6 HCA

CN 2-Propenoic acid, 9H-fluoren-9-ylidenebis[[1,1'-biphenyl]-5,2-diyloxy(2-hydroxy-3,1-propanediyl)] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C08G063-676
ICS C07C069-54; C08F290-06; C08G059-42; G03F007-004; G03F007-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 38
ST carboxy terminated bisphenol fluorene epoxy acrylate polymer;
glycidyloxyphenyl fluorene acrylate polymer photopolymerizable
comprn; neg **photoresist** bishydroxyphenylfluorene
dicarboxylic acid polymer
IT Negative **photoresists**
(UV; prepn. of photopolymerizable HO₂C-terminated bisphenol
fluorene epoxy (meth)acrylate-based unsatd. polyesters and their
compns. for **resists** and color filters)
IT Polyesters, preparation
(acrylates, carboxyl group-contg.; prepn. of photopolymerizable
HO₂C-terminated bisphenol fluorene epoxy (meth)acrylate-based
unsatd. polyesters and their compns. for **resists** and
color filters)
IT Epoxy resins, uses
(comprns. contg.; prepn. of photopolymerizable HO₂C-terminated

- bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT 29570-58-9, Dipentaerythritol hexaacrylate 66055-62-7, Epikote YX 4000
 (compns. contg.; prepn. of photopolymerizable HO₂C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT 143182-97-2P **405316-31-6P** 538316-06-2P
 (prepn. of photopolymerizable HO₂C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT 546084-33-7P, Benzophenonetetracarboxylic dianhydride-9,9-bis[4-(3'-acryloyloxy-2'-hydroxypropoxy)phenyl]fluorene-9,9-bis[[4-(3'-acryloyloxy-2'-hydroxypropoxy)-3-phenyl]phenyl]fluorene copolymer, half ester with 1,2,3,6-tetrahydrophthalic anhydride 546084-36-0P, Benzophenonetetracarboxylic dianhydride-9,9-bis[4-(3'-acryloyloxy-2'-hydroxypropoxy)phenyl]fluorene-9,9-bis[[4-(3'-acryloyloxy-2'-hydroxypropoxy)-3-methyl]phenyl]fluorene copolymer, half ester with 1,2,3,6-tetrahydrophthalic anhydride
 (prepn. of photopolymerizable HO₂C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)

L45 ANSWER 4 OF 9 HCA COPYRIGHT 2007 ACS on STN

137:302225 Optically active compound and photosensitive resin composition.. Hanabata, Makoto; Sato, Masahiro; Katayama, Junko; Kitajima, Satsuki; Niwa, Atsushi (Kansai Research Institute Inc., Japan). PCT Int. Appl. WO 2002079131 A1 **20021010**, 166 pp.
 DESIGNATED STATES: W: CA, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP3140 20020329. PRIORITY: JP 2001-97019 20010329; JP 2001-97020 20010329.

AB The disclosed optically active compds. are represented by the following formula (1) and is used in combination with a photosensitizer: A-[(J)m-(X-Pro)]n (1) wherein A represents a hydrophobic unit comprising at least one hydrophobic group selected among hydrocarbon groups and heterocyclic groups; J represents a connecting group; X-Pro represents a hydrophilic group protected by a protective group Pro eliminable with light irradn.; m is 0 or 1; and n is an integer of 1 or larger. The protective group Pro may be eliminable upon light irradn. by the action of the photosensitizer (esp. an acid generator), or may be a hydrophobic protective group. The hydrophilic group may be hydroxyl, carboxyl, etc. The optically active compd. is highly sensitive even to short-wavelength lights and is useful in the field of **resists** for forming a pattern with high resoln.

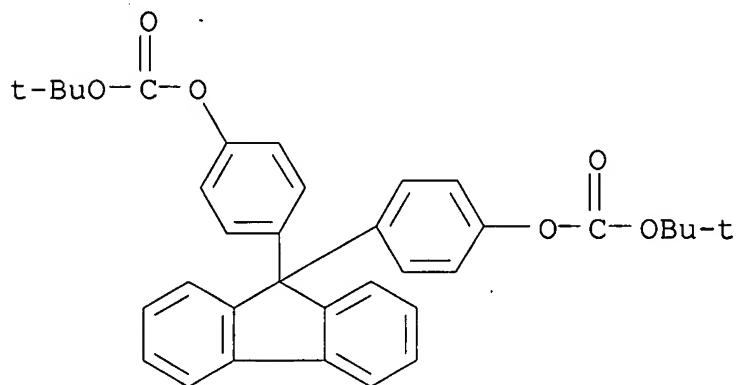
IT **469858-95-5P 469859-65-2P 469859-71-0P**

(synthesis and use as photosensitive compd. for photoacid

generator type **photoresist** compns.)

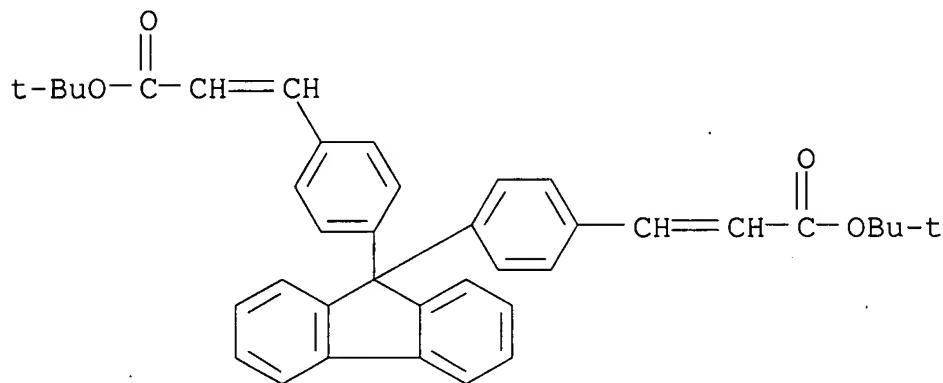
RN 469858-95-5 HCA

CN Carbonic acid, 9H-fluoren-9-ylidenedi-4,1-phenylene
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



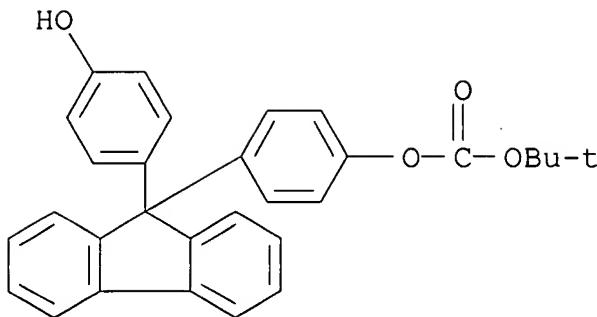
RN 469859-65-2 HCA

CN 2-Propenoic acid, 3,3'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis-,
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 469859-71-0 HCA

CN Carbonic acid, 1,1-dimethylethyl 4-[9-(4-hydroxyphenyl)-9H-fluoren-9-yl]phenyl ester (9CI) (CA INDEX NAME)



- IC ICM C07C043-205
 ICS C07C069-96; C07C043-225; C07C069-92; C07C069-773; C07C043-215;
 C07C069-618; C07C069-65; C07C069-734; C07C069-82; C07C069-76;
 C07C069-94; C07C235-56; C07C271-58; C07C317-22; C07F007-08;
 G03F007-004; C08K005-00; C08L101-00; H01L021-30
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 25
- ST photosensitive compd photoacid generation **photoresist**
- IT Positive **photoresists**
 (photosensitive compds. for photoacid generator type)
- IT 233756-76-8
 (intermediate in synthesis of photosensitive compd for
photoresists)
- IT 1486-51-7P 1927-95-3P 2234-45-9P 2776-58-1P 3166-97-0P
 3233-32-7P, 4-Hydroxyphenyl acetate 5438-19-7P 6311-66-6P
 6793-92-6P 18979-50-5P 25813-95-0P 32122-11-5P 39604-97-2P
 39969-56-7P 50670-76-3P 50687-68-8P 59748-13-9P 59748-38-8P
 61760-85-8P 63619-51-2P 65195-14-4P 65355-29-5P 70568-46-6P
 81005-00-7P 81631-63-2P 82657-70-3P 83558-77-4P 88038-94-2P
 90925-43-2P 97476-14-7P 107394-89-8P 113248-02-5P
 115478-59-6P 124388-30-3P 127972-28-5P 131610-59-8P
 148731-02-6P 148731-12-8P 152873-82-0P 218769-04-1P
 252983-81-6P 258513-95-0P 436848-04-3P 469859-73-2P
 469859-74-3P 469859-75-4P 469859-76-5P 469859-77-6P
 469859-78-7P 469859-79-8P 469859-80-1P 469859-81-2P
 469859-82-3P 469859-83-4P 469859-84-5P 469859-85-6P
 469859-86-7P 469859-87-8P 469859-88-9P 469859-89-0P
 469859-90-3P 469859-91-4P 469859-92-5P
 (intermediate in synthesis of photosensitive compd for
photoresists)
- IT 59269-51-1D, Polyvinylphenol, butoxycarbonyloxy substituted
 59269-51-1D, Polyvinylphenol, ethoxyethyl ethers 66003-78-9
 (intermediate in synthesis of photosensitive compd for
photoresists)
- IT 75-36-5, Acetyl chloride 75-65-0, tert-Butanol, reactions

80-05-7, Bisphenol A, reactions 83-56-7, 1,5-Dihydroxynaphthalene
 90-15-3, 1-Naphthol 92-69-3, 4-Phenylphenol 92-86-4,
 4,4'-Dibromobiphenyl 92-88-6, 4,4'-Biphenol 94-18-8, Benzyl
 4-hydroxybenzoate 98-54-4, 4-tert-Butylphenol 99-76-3, Methyl
 4-hydroxybenzoate 100-20-9, Terephthaloyl dichloride 100-44-7,
 Benzyl chloride, reactions 103-16-2, 4-Benzylxyphenol 104-81-4
 106-37-6, p-Dibromobenzene 106-41-2, 4-Bromophenol 106-94-5,
 1-Bromopropane 108-73-6, 1,3,5-Trihydroxybenzene 109-92-2, Ethyl
 vinyl ether 110-53-2, n-Pentyl bromide 123-31-9, Hydroquinone,
 reactions 135-19-3, 2-Naphthol, reactions 327-51-5,
 1,4-Dibromo-2,5-difluorobenzene 358-23-6, Trifluoromethanesulfonic
 acid anhydride 536-74-3 581-43-1, 2,6-Dihydroxynaphthalene
 588-93-2, 1-Bromo-4-propylbenzene 589-15-1 623-05-2,
 4-Hydroxybenzyl alcohol 626-39-1, 1,3,5-Tribromobenzene
 627-19-0, 1-Pentyne 645-56-7, 4-Propylphenol 771-63-1,
 2,3,5,6-Tetrafluorohydroquinone 1066-54-2 1478-61-1,
 2,2-Bis(4-hydroxyphenyl)hexafluoropropane 1663-39-4 2438-05-3,
 4-Propylbenzoic acid 3236-71-3 4422-95-1, 1,3,5-
 Benzenetricarbonyl trichloride 13595-25-0 15231-91-1,
 6-Bromo-2-naphthol 17696-62-7, Phenyl 4-hydroxybenzoate
 23138-50-3 25641-61-6, Bis(hydroxyphenyl) sulfone 29558-77-8,
 4-Bromo-4'-hydroxybiphenyl 33228-44-3, 4-Pentylaniline
 34619-03-9, Di-tert-butyl carbonate 38289-27-9 51554-95-1
 54589-51-4 62452-73-7 81936-33-6 82575-69-7 86579-53-5
 469859-72-1

(reactant in synthesis of photosensitive compd for
photoresists)

IT 99-89-8, 4-Isopropylphenol

(reaction with Et vinyl ether in synthesis of photosensitive
 compd for **photoresists**)

IT	1706-74-7P	28313-42-0P	69225-39-4P	90875-14-2P	115052-69-2P
	115311-03-0P	117458-06-7P	127175-62-6P	127806-99-9P	
	129104-70-7P	139254-88-9P	139290-12-3P	142524-71-8P	
	145531-14-2P	147833-74-7P	160649-31-0P	166597-59-7P	
	166597-61-1P	171418-02-3P	195057-82-0P	202654-70-4P	
	210410-26-7P	210410-28-9P	436848-03-2P	447464-29-1P	
	447464-33-7P	454692-73-0P	469858-90-0P	469858-91-1P	
	469858-92-2P	469858-93-3P	469858-94-4P	469858-95-5P	
	469858-96-6P	469858-97-7P	469858-98-8P	469858-99-9P	
	469859-00-5P	469859-01-6P	469859-02-7P	469859-03-8P	
	469859-04-9P	469859-05-0P	469859-06-1P	469859-07-2P	
	469859-08-3P	469859-09-4P	469859-10-7P	469859-11-8P	
	469859-12-9P	469859-13-0P	469859-14-1P	469859-15-2P	
	469859-17-4P	469859-18-5P	469859-19-6P	469859-20-9P	
	469859-21-0P	469859-22-1P	469859-23-2P	469859-24-3P	
	469859-25-4P	469859-26-5P	469859-27-6P	469859-28-7P	
	469859-29-8P	469859-30-1P	469859-31-2P	469859-32-3P	
	469859-33-4P	469859-34-5P	469859-35-6P	469859-36-7P	

469859-37-8P	469859-38-9P	469859-39-0P	469859-40-3P
469859-41-4P	469859-42-5P	469859-43-6P	469859-44-7P
469859-45-8P	469859-46-9P	469859-47-0P	469859-48-1P
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469859-53-8P	469859-54-9P	469859-55-0P	469859-56-1P
469859-57-2P	469859-58-3P	469859-59-4P	469859-60-7P
469859-61-8P	469859-62-9P	469859-63-0P	469859-64-1P
469859-65-2P	469859-66-3P	469859-67-4P	469859-68-5P
469859-69-6P	469859-70-9P	469859-71-0P	

(synthesis and use as photosensitive compd. for photoacid generator type **photoresist** compns.)

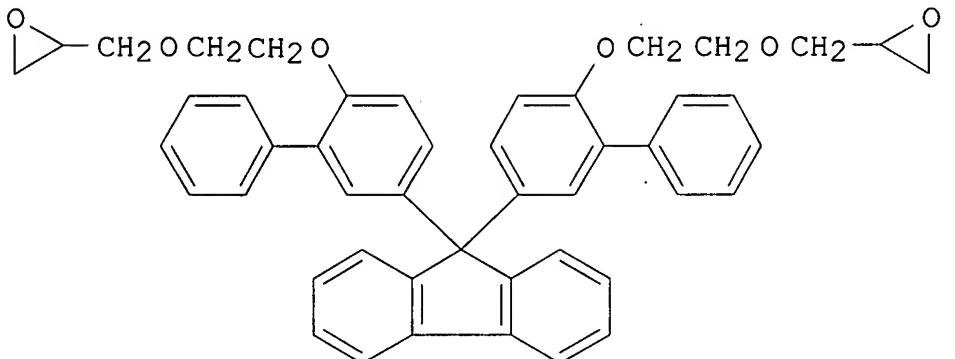
IT 436848-01-0P 469859-16-3P

(synthesis and use as photosensitive compd. for photoacid generator type **photoresist** compns. synthesis and use as photosensitive compd. for photoacid generator type **photoresist** compns.)

L45 ANSWER 5 OF 9 HCA COPYRIGHT 2007 ACS on STN

137:178025 Modified epoxy resin compositions for solder **resists** or interlayer insulators of printed circuits. Koyanagi, Takao; Ozaki, Toru; Yokojima, Minoru (Nippon Kayaku Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002226529 A **20020814**, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-20957 20010130.

GI



AB The compns. comprise diluents and ethylenically unsatd. group-contg. resins prep'd, by (1) reacting epoxy resins I with ethylenically unsatd. group- and CO₂H-contg. compds. and optionally satd. monocarboxylic acids and optionally (2) reacting the resulting epoxy (meth)acrylates with polybasic acid anhydrides. The compns. may contain photopolymn. initiators and/or heat-curable components. Cured products of the compns. and materials (e.g., printed circuits) having the cured product layers are also claimed. The cured

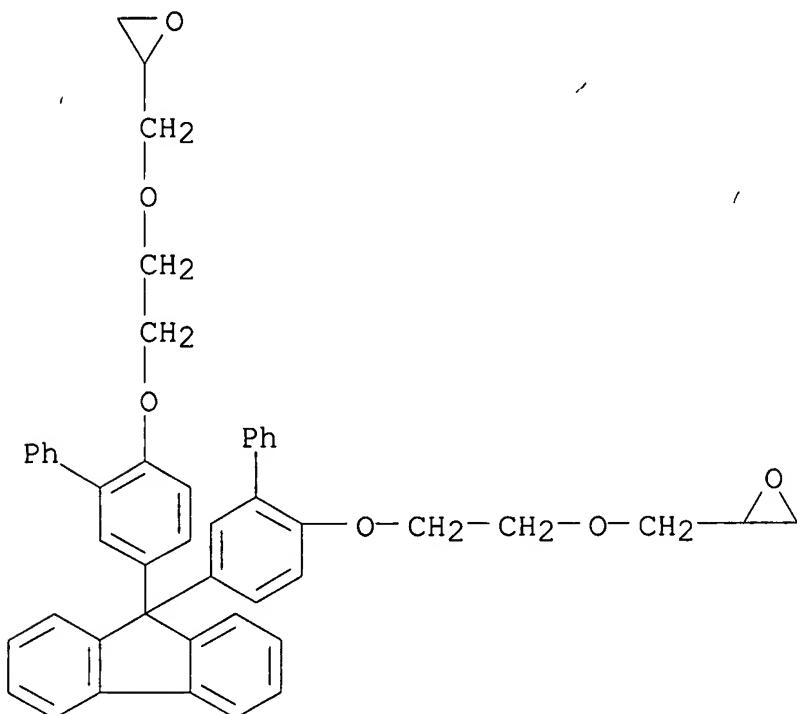
products show good solder heat resistance, electroless coatability, and elec. insulation and the compns. can be developed with org. solvents or dil. alk. solns.

IT **445498-39-5P**

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

RN 445498-39-5 HCA

CN Oxirane, 2,2'-[9H-fluoren-9-ylidenebis([1,1'-biphenyl]-5,2-diyloxy-2,1-ethanediylloxymethylene)]bis- (9CI) (CA INDEX NAME)



IC ICM C08F290-06

ICS C08F002-50; C08F299-02; C08G059-16; G03F007-004; G03F007-027;
G03F007-028; H05K003-28; H05K003-46

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 38, 74

ST epoxy resin acrylate solder **resist** interlayer insulator;
printed circuit solder **resist** interlayer insulator

IT Epoxy resins, uses

(acrylates; modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

IT Electric insulators

Printed circuits

Solder **resists**

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

IT **445498-39-5P**(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

IT 446036-42-6P 446036-43-7P

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

IT 108-78-1, Melamine, uses 77641-99-7, Kayarad DPHA 87320-05-6, Kayarad R 604 225919-17-5, NC 3000P

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

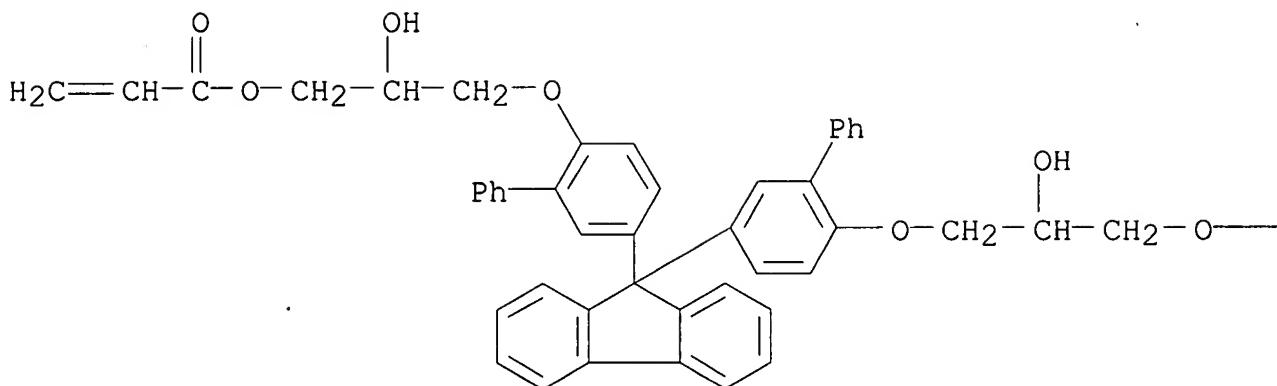
L45 ANSWER 6 OF 9 HCA COPYRIGHT 2007 ACS on STN

136:280161 Photocurable unsaturated resins useful for alkali-developable **photoresists** and their use in the manufacture of color filters. Fujii, Satoru; Yanagihara, Yoshinao; Kitano, Kei (Nagase Kasei Kogyo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2002088136 A 20020327, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-277236 20000912.AB The resins are of HOOCYCO₂[XOCOZ(COOH)2CO₂]nXOCOYCOOH type [X = CH₂:CHC(O)OCH₂CHCH₂O[AOCH₂CH(OH)CH₂O]aAOCH₂CHCH₂O C(O)CH:CH₂ where A = linking unit derived from 9,9-bis(4-hydroxy-3-phenyl)fluorene (I) via hydroxy groups; Y = unit derived from acid anhydride; Z = unit derived from acid dianhydride; a = 0-20] and can be prepd. by the reaction of a I compd.-based epoxy resin with acrylic acid then modifying with acid anhydride compds. Thus, heating a mixt. of 9,9-bis(4-hydroxy-3-phenyl)fluorene diglycidyl ether 312, triethylbenzylammonium chloride 0.450, 2,6-diisobutylphenol 0.100, acrylic acid 72.0 and propylene glycol monomethyl acetate 500 g at 90-100° while flushing with air then increasing the temp. to 120° gave an acrylated product 584 g of which was combined with propylene glycol monomethyl acetate 80.5, benzophenonetetracarboxylic anhydride 80.5 and tetraethylammonium bromide 1 g, heated to 110-115°, maintained at this temp. for 4 h, combined with 1,2,3,6-tetrahydrophthalic anhydride 39.0 and heated at 90° for 6 h to give a target resin. Mixing the resin 20.0 with dipentaerythritol hexaacrylate 8.6, tetramethylbiphenyl epoxy resin 4.4, Michler's ketone 0.2, Irgacure 907 (photoinitiator) 1.2, and propylene glycol monomethyl acetate 65.6 parts gave a photocurable compn. for forming color filter.IT **405316-31-6P**(intermediate; photocurable unsatd. resins useful for alkali-developable **photoresists** and use in manuf. of color filters)

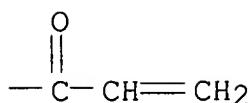
RN 405316-31-6 HCA

CN 2-Propenoic acid, 9H-fluoren-9-ylidenebis[[1,1'-biphenyl]-5,2-diyloxy(2-hydroxy-3,1-propanediyl)] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

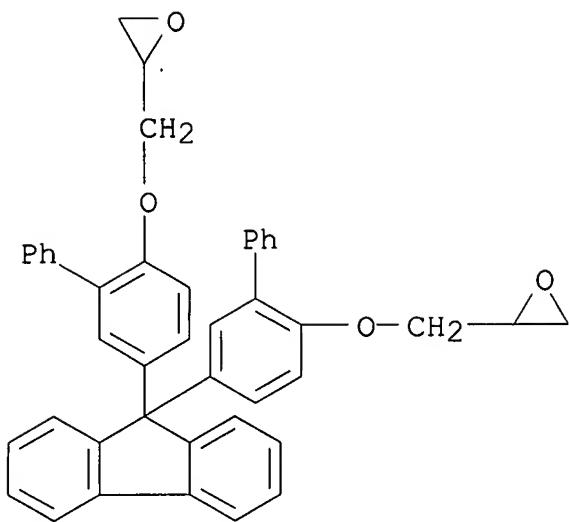


IT 405316-30-5

(reactant; photocurable unsatd. resins useful for alkali-developable **photoresists** and use in manuf. of color filters)

RN 405316-30-5 HCA

CN Oxirane, 2,2'-[9H-fluoren-9-ylidenebis([1,1'-biphenyl]-5,2-diyloxymethylene)]bis- (9CI) (CA INDEX NAME)



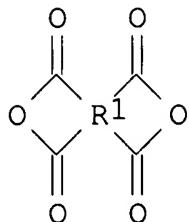
- IC ICM C08G059-17
 ICS C08F002-48; C08F299-02; C08G059-42; C08G063-52; G02B005-20;
 G03F007-004; G03F007-027; G03F007-028
- CC 37-3 (Plastics Manufacture and Processing)
 Section cross-reference(s): 74, 76
- ST color filter photocurable fluorene bisphenol epoxy resin acrylate
photoresist
- IT Optical filters
Photoresists
 (photocurable unsatd. resins useful for alkali-developable
photoresists and use in manuf. of color filters)
- IT 30581-98-7D, Tetramethylbiphenyl, epoxy resins
 (co-agents; photocurable unsatd. resins useful for
 alkali-developable **photoresists** and use in manuf. of
 color filters)
- IT 29570-58-9, Dipentaerythritol hexaacrylate
 (crosslinker; photocurable unsatd. resins useful for
 alkali-developable **photoresists** and use in manuf. of
 color filters)
- IT **405316-31-6P**
 (intermediate; photocurable unsatd. resins useful for
 alkali-developable **photoresists** and use in manuf. of
 color filters)
- IT 405511-51-5P, 9,9-Bis(4-hydroxy-3-phenyl)fluorene
 di(2-hydroxy-3-acryloyloxypropyl) ether, copolymer with
 benzophenonetetracarboxylic anhydride, ester with
 1,2,3,6-tetrahydronaphthalic anhydride
 (photocurable; photocurable unsatd. resins useful for
 alkali-developable **photoresists** and use in manuf. of
 color filters)

IT 85-43-8, 1,2,3,6-Tetrahydrophtalic anhydride **405316-30-5**
 (reactant; photocurable unsatd. resins useful for
 alkali-developable **photoresists** and use in manuf. of
 color filters)

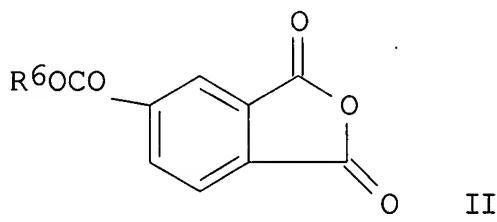
L45 ANSWER 7 OF 9 HCA COPYRIGHT 2007 ACS on STN

129:349065 Radiation-sensitive composition containing unsaturated carboxylic acid compound for manufacture of color filter. Kawamura, Shigeo; Abe, Megumi; Nemoto, Hiroaki; Kumano, Atsushi (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10274848 A
19981013 Heisei, 17 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1997-81253 19970331.

GI



I



II

AB The radiation-sensitive compn. contains ≥ 1 selected from compds. having an unsatd. group and carboxyl group prep'd. by reaction of (1) a tetracarboxylic acid dianhydride I ($R_1 =$ tetravalent org. group) with a compd. R_2R_3 ($R_2 =$ monovalent org. group having ≥ 1 radiation-polymerizable unsatd. bond; $R_3 = OH$ or amino) and of (2) a compd. $R_5R_4R_5$ ($R_4 =$ divalent org. group; $R_5 = OH$ or amino) with an acid anhydride II ($R_6 =$ monovalent org. group having ≥ 1 radiation-polymerizable unsatd. bond). A radiation-sensitive compn. for color filter is also claimed, which contains (a) the above compd., (b) a colorant, (c) a binder polymer and a polyfunctional monomer, (d) a photopolymn. initiator, and (e) a solvent. The compn. shows high photosensitivity and a high quality color filter with high hardness is obtained therefrom.

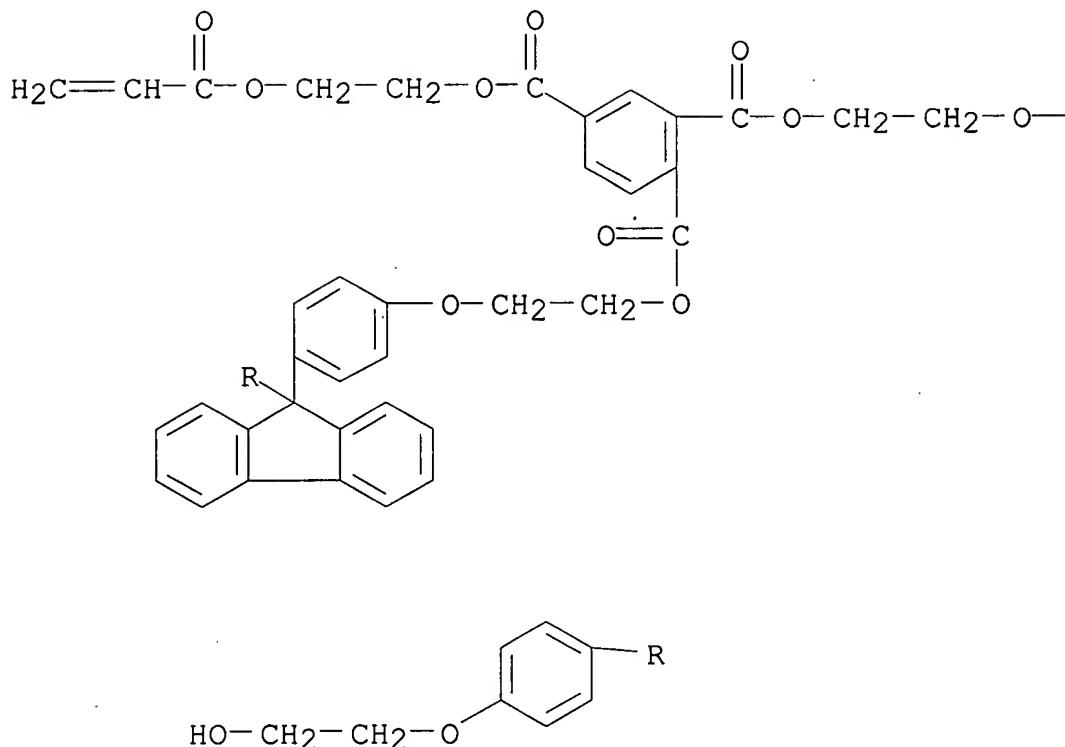
IT **215392-62-4P**

(radiation-sensitive resin compn. contg. compd. having unsatd. group and carboxyl group for manuf. of color filter)

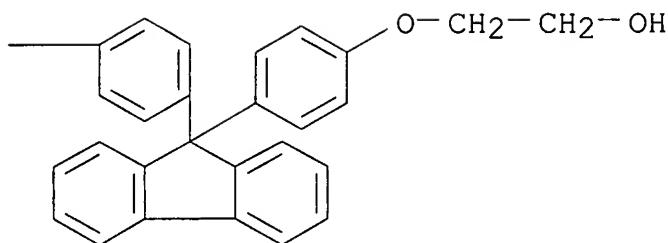
RN 215392-62-4 HCA

CN 1,2,4-Benzenetricarboxylic acid, 1,2-bis[2-[4-[9-[4-(2-hydroxyethoxy)phenyl]-9H-fluoren-9-yl]phenoxy]ethyl]4-[2-[(1-oxo-2-propenyl)oxy]ethyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM G03F007-027

ICS G03F007-027; C08G063-52; C08G073-16; G02B005-20

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST color filter radiation sensitive **resist**; carboxylic acid ester unsatd compd **resist**; amide unsatd compd radiation

sensitive **resist**

Resists

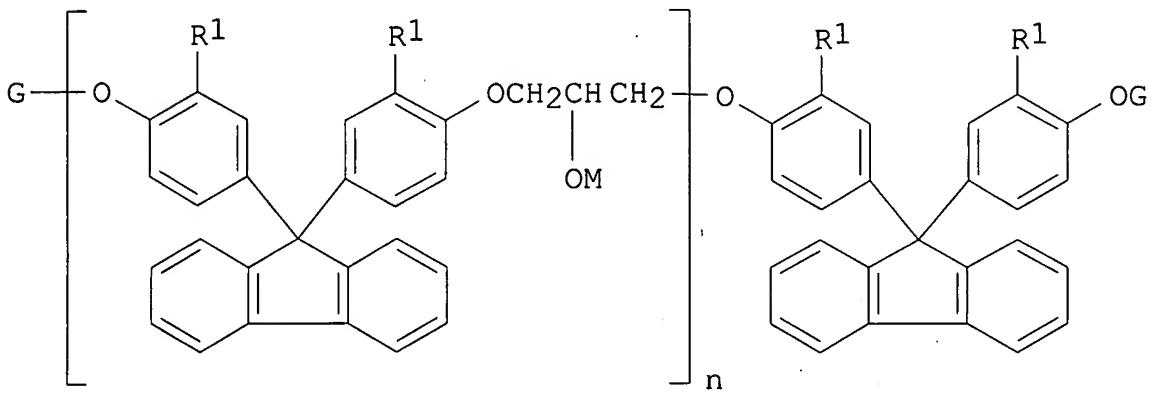
(radiation-sensitive; radiation-sensitive resin compn. contg. compd. having unsatd. group and carboxyl group for manuf. of color filter)

IT 4687-94-9DP, reaction products with 9,9-bis(4-aminophenyl)fluorene 15499-84-0DP, 9,9-Bis(4-aminophenyl)fluorene, reaction products with bisphenol A diglycidyl ether diacrylate **215392-62-4P**
(radiation-sensitive resin compn. contg. compd. having unsatd. group and carboxyl group for manuf. of color filter)

L45 ANSWER 8 OF 9 HCA COPYRIGHT 2007 ACS on STN

126:251908 Fluorene group-containing epoxy resin compositions and cured products. Yokoshima, Minoru (Nippon Kayaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 09040744 A **19970210** Heisei, 8 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-211390 19950728.

GI



AB The title compns. with good developing property and light sensitivity, useful for printed circuits, etc., contain reaction products of epoxy resins (I; R1 = H, alkyl; M = H, glycidyl; G = glycidyl; n = 0-50; when n = 1, then M = glycidyl; when n ≥ 2, then ≥1 of M = glycidyl) and monocarboxylic acids contg. unsatd. groups. Solder **resist** resin compns. and cured products are also claimed. Thus, I (R1 = M = H, n = 1.0) 434, epichlorohydrin 925, and 98.5%-NaOH 21.3 g reacted in DMSO to obtain an epoxy resin, 310 parts of which was treated with 70.6 parts acrylic acid, and the product (69 parts) was roll-kneaded with Kayarad DPHA 3.5, Irgacure 907 3.0, Kayacure DETX-S 0.5, Kayacure BMS 1.0, R-1415-1 (rubber-modified epoxy resin) 10.0, dicyandiamide 0.5, SiO₂ 10.0, a pigment 0.5, Aerosil 200 1.0, and Modaflow

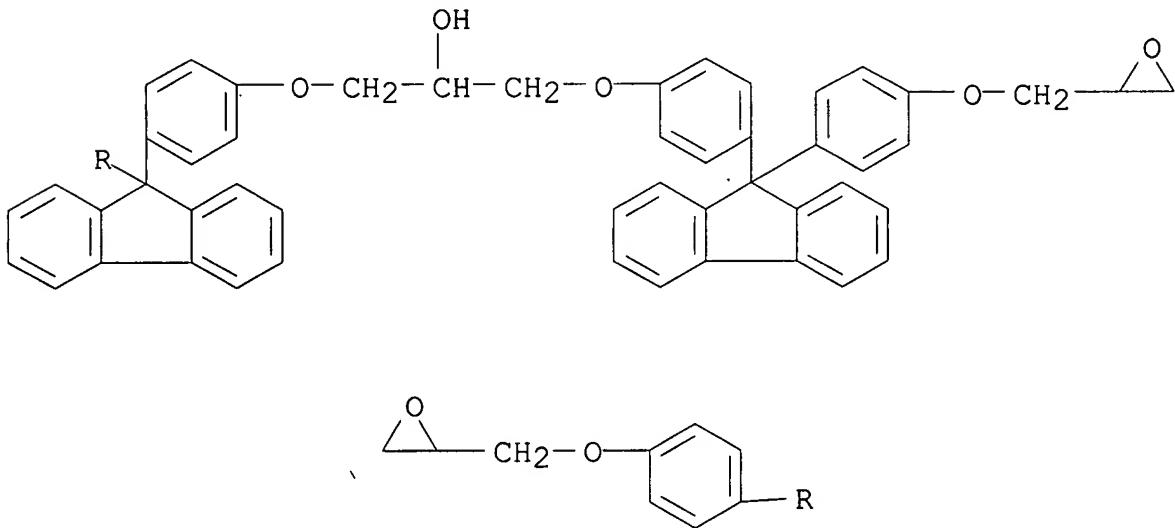
(leveling agent) 1.0 part to give a compn. showing high light-sensitivity, and good resistance to solvents, acids, and heat.

IT **188579-70-6DP**, reaction products with epichlorohydrin and acrylic acid

(fluorene group-contg. epoxy resin-unsatd. carboxylic acid product compns. and cured products)

RN 188579-70-6 HCA

CN 2-Propanol, 1,3-bis[4-[9-[4-(oxiranylmethoxy)phenyl]-9H-fluoren-9-yl]phenoxy]- (9CI) (CA INDEX NAME)



IC ICM C08G059-17

ICS C08F299-02; G03F007-038; H05K003-28

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 74

ST solder **resist** fluorene epoxy resin carboxylate; epoxy resin unsatd carboxylic acid product; acrylic acid epoxy resin adduct **resist**

IT Solder resists

(fluorene group-contg. epoxy resin-unsatd. carboxylic acid product compns. for)

IT 79-10-7DP, Acrylic acid, reaction products with fluorene group-contg. epoxy resin **188579-70-6DP**, reaction products with epichlorohydrin and acrylic acid

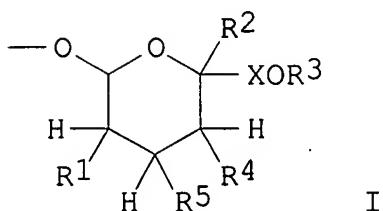
(fluorene group-contg. epoxy resin-unsatd. carboxylic acid product compns. and cured products)

L45 ANSWER 9 OF 9 HCA COPYRIGHT 2007 ACS on STN

117:36614 Acid labile solution inhibitors and positively and negatively working radiation-sensitive compositions based on them. Schaedeli, Ulrich (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP 475903 A1

19920318, 15 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE. (German). CODEN: EPXXDW. APPLICATION: EP 1991-810707 19910904. PRIORITY: CH 1990-2971 19900913.

GI



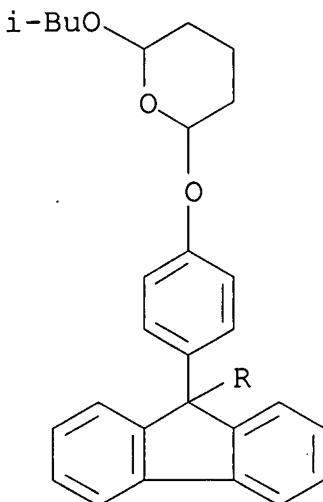
AB Non-polymeric compds. contg. ≥ 1 arom. ring with ≥ 1 tetrahydropyranyloxy substituent I [R1 = R2, halo, alkoxy, aryloxy; R2 = H, alkyl, cycloalkyl, aryl; R3 = hydrocarbyl; R4, R5 = H, halo, alkyl, alkoxy, aryloxy; X = a single bond, CH₂, (CH₂)₂] are esp. suitable for prepn. of neg. and pos. **photoresists** which are preferably used in deep UV microlithog.

IT **142300-64-9P 142300-65-0P**
(prepn. of, **photoresists** contg., for deep-UV
microlithog.)

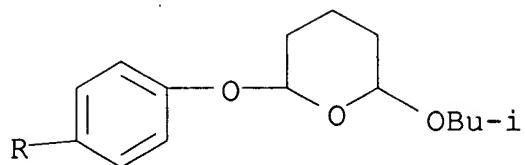
RN 142300-64-9 HCA

CN 2H-Pyran, 2,2'-[9H-fluoren-9-ylidenebis(4,1-phenyleneoxy)]bis[tetrahydro-6-(2-methylpropoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A

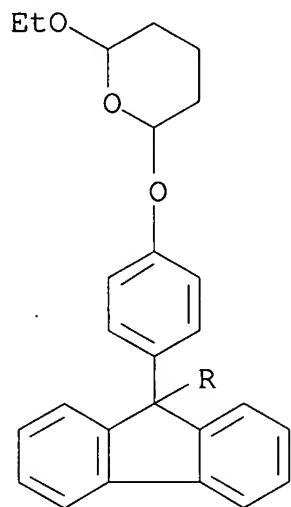


PAGE 2-A

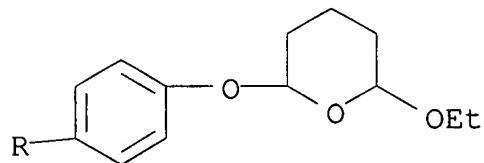


RN 142300-65-0 HCA
 CN 2H-Pyran, 2,2'-[9H-fluoren-9-ylidenebis(4,1-phenyleneoxy)]bis[6-ethoxytetrahydro- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07D309-10
 ICS G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST lithog **photoresist** tetrahydropyranyloxy arom compd; acid

IT labile soln inhibitor **photoresist**
Resists
(photo-, tetrahydropyranloxy arom. acid labile soln. inhibitors
for)
IT 142300-63-8P **142300-64-9P 142300-65-0P**
142300-66-1P 142300-67-2P
(prepn. of, **photoresists** contg., for deep-UV
microlithog.)

=> D L46 1-24 TI

L46 ANSWER 1 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Curable polymer compositions with good heat and moisture resistance

L46 ANSWER 2 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Aryl-aryl dendrimers

L46 ANSWER 3 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Long-range electron transfer across molecule-nanocrystalline
semiconductor interfaces using tripodal sensitizers

L46 ANSWER 4 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Selective upper-rim adamantylation of calix[4]arenes

L46 ANSWER 5 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Episulfides containing fluorene skeleton, their cured products, and
manufacture for optical materials having resistance to heat and
light

L46 ANSWER 6 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Water-Soluble Adamantane-Terminated Dendrimers Possessing a Rhenium
Core

L46 ANSWER 7 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Preparation of fluorene derivatives as materials for polymers

L46 ANSWER 8 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Synthesis of a molecular tripod to anchor molecular coordination
compounds to semiconductor nanoparticles

L46 ANSWER 9 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI A tower-shaped prototypic molecule designed as an atomically sharp
tip for AFM applications

L46 ANSWER 10 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Rigid stars: properties and functions

- L46 ANSWER 11 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Rigid star-shaped adamantane multipodes
- L46 ANSWER 12 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Tetrahedral adamantane derivatives. Glass formation and melting behavior
- L46 ANSWER 13 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Antistatic heat-resistant polycarbonates, manufacture thereof, compositions containing the same, and oxyalkylene unit-containing divalent phenol derivatives and manufacture thereof
- L46 ANSWER 14 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Blends of reactive diluents with phenylethynyl-terminated arylene ether oligomers
- L46 ANSWER 15 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Bisbenzocyclobutene thermosetting compound and its preparation
- L46 ANSWER 16 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Polyester compositions for products with high strength and good processability and dyeingability
- L46 ANSWER 17 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Host molecule design via lattice considerations. Crystal structure of the inclusion compound between cis-1,4-bis(9-phenylfluoren-9-yloxyethyl)cyclohexane and dioxane (2:1)
- L46 ANSWER 18 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Synthesis of poly(arylene ethers) based on 9,9-bis(3,5-diphenyl-4-hydroxyphenyl)fluorene
- L46 ANSWER 19 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Carbon-13 NMR spectra of the derivatives of adamantane. Chemical shifts of carbon-13 in 3-substituted 1-aryladamantanes
- L46 ANSWER 20 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Rotational isomerism in fluorene derivatives. XII. Conformational equilibria of 9-substituted 9-(2-methoxymethylphenyl)fluorenes
- L46 ANSWER 21 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI A new approach for the design of inclusion compounds
- L46 ANSWER 22 OF 24 HCA COPYRIGHT 2007 ACS on STN
TI Alkylation of aromatic compounds with 1-bromoadamantane
- L46 ANSWER 23 OF 24 HCA COPYRIGHT 2007 ACS on STN

TI Biphenylyl-, terphenylyl-, and polyphenylylfluorenes

L46 ANSWER 24 OF 24 HCA COPYRIGHT 2007 ACS on STN

TI 3,3'-Bis(aminomethyl)-1,1'-bioadamantane

=> D L46 1,2,4,10,11,18,23 CBIB ABS HITSTR HITRN

L46 ANSWER 1 OF 24 HCA COPYRIGHT 2007 ACS on STN

141:89950 Curable polymer compositions with good heat and moisture resistance. Horie, Michiyasu; Orihara, Tamotsu (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004189901 A 20040708, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-359969 20021211.

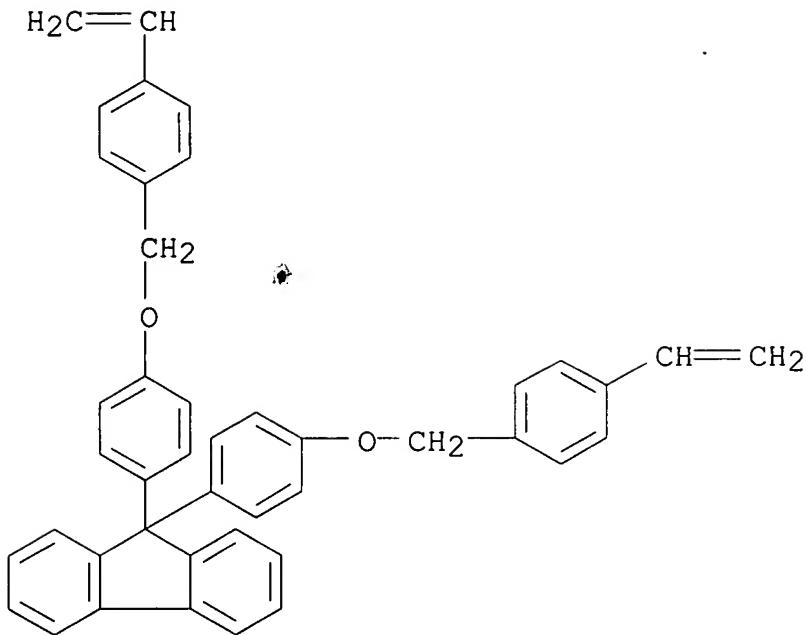
AB Title compns., useful for laminates, molding materials, and semiconductor sealants, comprise (A) vinylbenzyl derivs. having ≥ 2 vinylbenzyl ether groups on each benzene ring selected from 6 kinds of Markush structures specified by the document and (B) 0.01-0.1 mol.% peroxides with decompn.-starting temp. (T) 120-140°. Thus, a compn. contg. 2,2-bis[4-(4-vinylbenzyloxy)phenyl]propane, styrene, and 2,5-dimethyl-2,5-bis(benzoylperoxy)hexane (T 129°) was heated at 180° for 1 h in a plate glass cell to give a test piece showing water absorption 0.21% after 2-h boiling, glass transition temp. 204°, and modulus 2900 MPa at 30° and 423 MPa at 300°.

IT **606927-42-8P**

(vinylbenzyl compd.-based curable compn. with good heat and moisture resistance)

RN 606927-42-8 HCA

CN 9H-Fluorene, 9,9-bis[4-[(4-ethenylphenyl)methoxy]phenyl]- (CA INDEX NAME)

IT **606927-42-8P**

(vinylbenzyl compd.-based curable compn. with good heat and moisture resistance)

L46 ANSWER 2 OF 24 HCA COPYRIGHT 2007 ACS on STN

137:208158 Aryl-aryl dendrimers. Burn, Paul Leslie; Samuel, Ifor David William; Lo, Shin-Chun (Isis Innovation Limited, UK). PCT Int.

Appl. WO 2002067343 A1 **20020829**, 51 pp. DESIGNATED

STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.

(English). CODEN: PIXXD2. APPLICATION: WO 2002-GB739 20020220.

PRIORITY: GB 2001-4177 20010220.

AB Light-emitting devices are described which incorporate, as the light-emitting element, a dendrimer of which the constituent dendrons include a conjugated dendritic structure comprising aryl and/or heteroaryl groups connected to each other via bonds between sp₂ hybridized ring atoms of the aryl or heteroaryl groups. Films of the compds. and color display devices using the compds. are described, as is the use of the compds. in semiconducting devices other than light-emitting devices (e.g., a photodiode, solar cell,

FET, or solid-state triode). Methods of manufg. the light-emitting devices are also described.

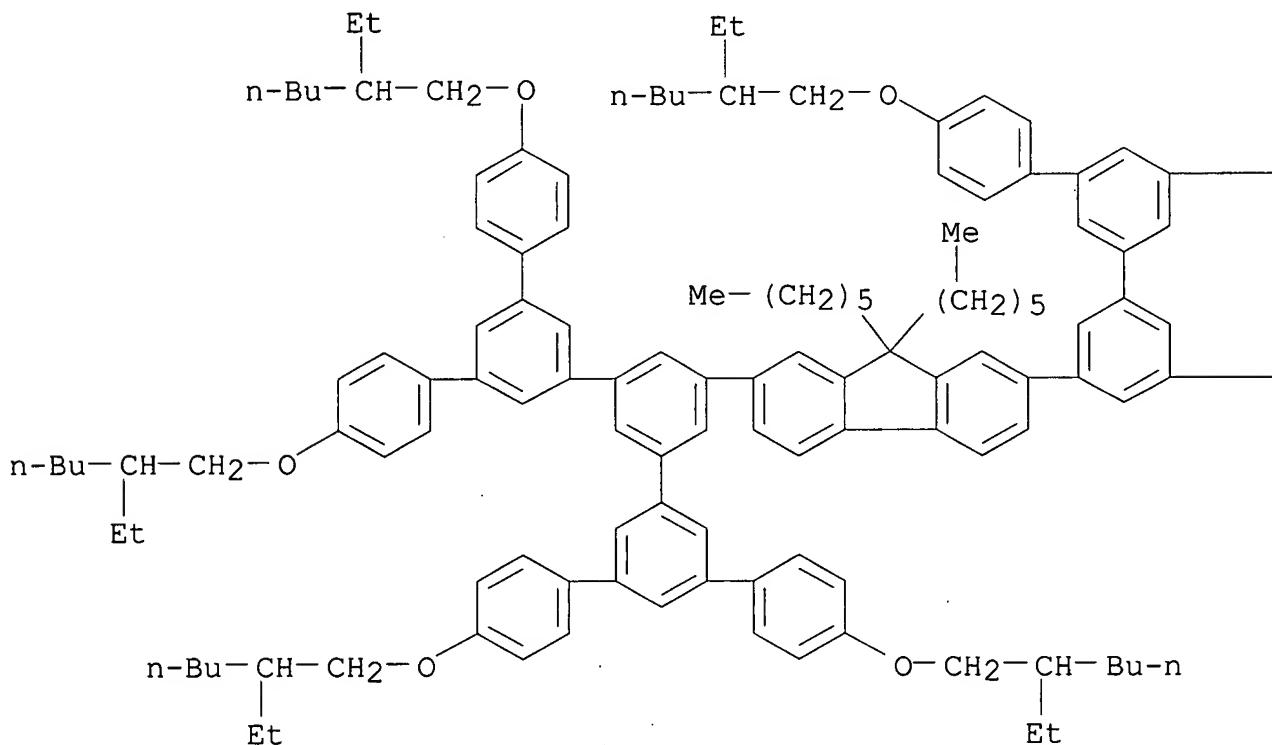
IT 452914-30-6P

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

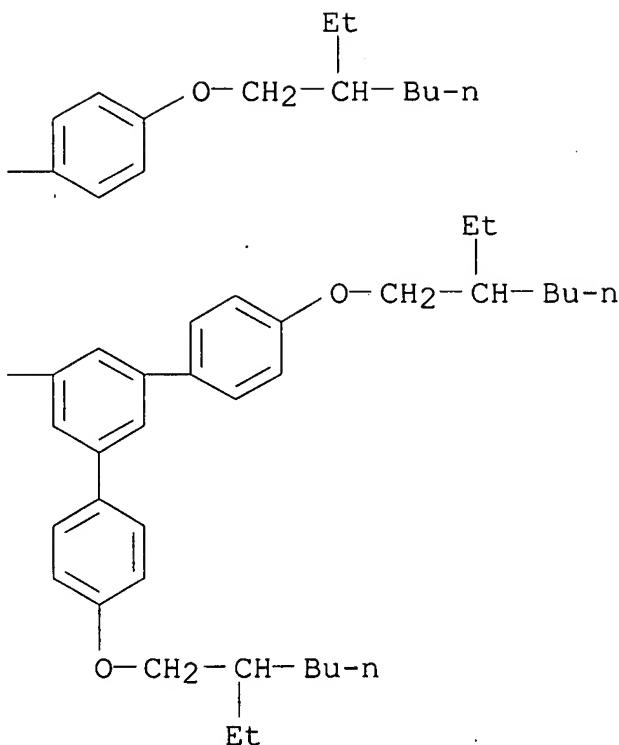
RN 452914-30-6 HCA

CN 9H-Fluorene, 2,7-bis[4,4''''-bis[(2-ethylhexyl)oxy]-5',5'''-bis[4-[(2-ethylhexyl)oxy]phenyl][1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-5''-yl]-9,9-dihexyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



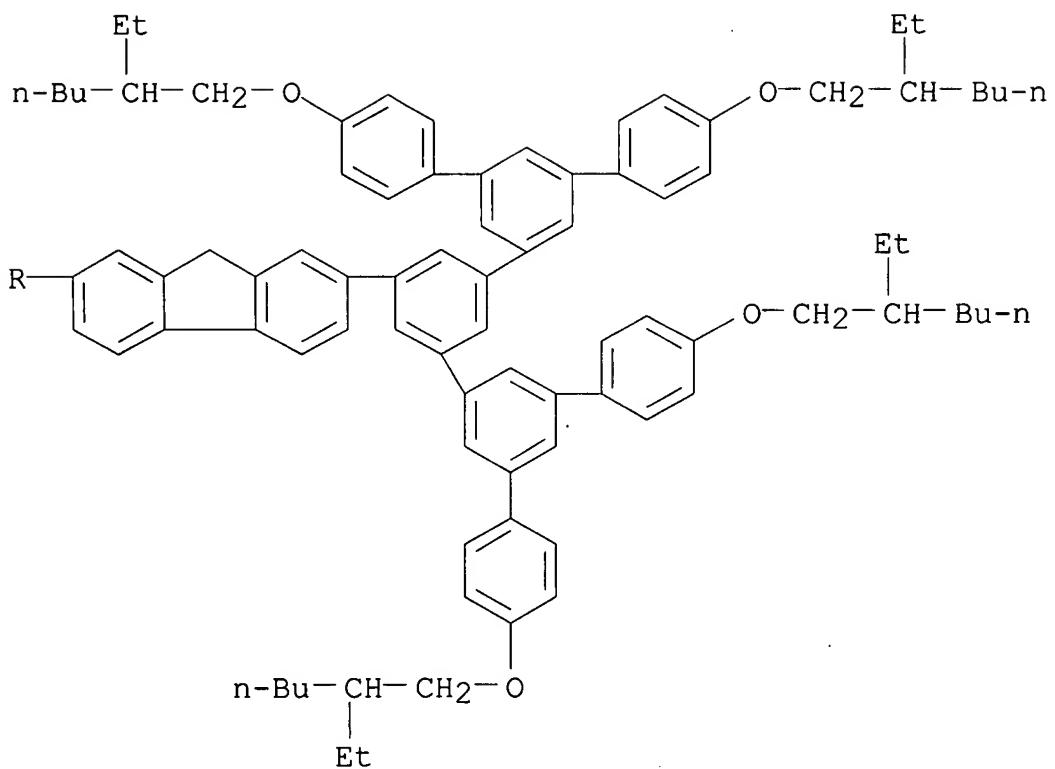
IT 452914-31-7P

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

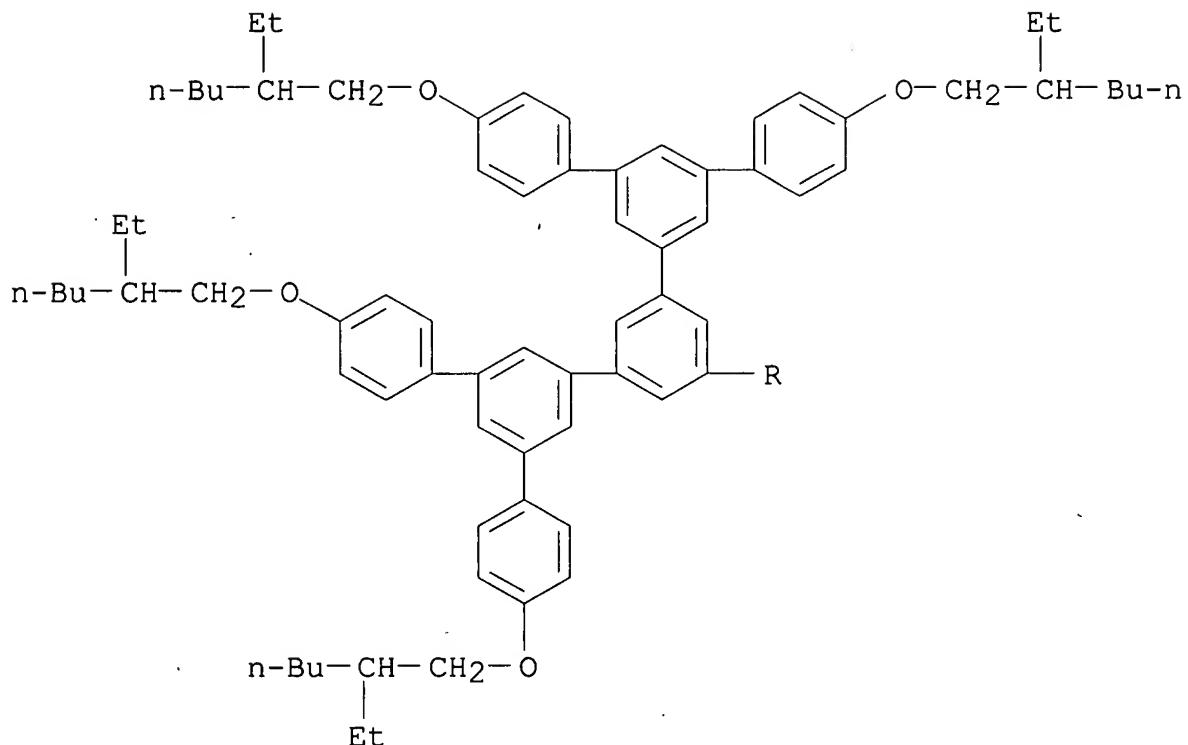
RN 452914-31-7 HCA

CN 9H-Fluorene, 2,7-bis[4,4''''-bis[(2-ethylhexyl)oxy]-5',5'''-bis[4-[(2-ethylhexyl)oxy]phenyl][1,1':3',1'':3'',1'''':3''',1'''''-quinquephenyl]-5''-yl]- (9CI) (CA INDEX NAME)

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IT **452914-30-6P**

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

IT **452914-31-7P**

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

L46 ANSWER 4 OF 24 HCA COPYRIGHT 2007 ACS on STN

136:5788 Selective upper-rim adamantylation of calix[4]arenes. Shokova, E. A.; Khomich, A. N.; Kovalev, V. V. (Faculty of Chemistry, Moscow State University, Moscow, 119899, Russia). Russian Journal of Organic Chemistry (Translation of Zhurnal Organicheskoi Khimii), 37(5), 612-619 (English) 2001. CODEN: RJOCEQ. ISSN: 1070-4280. OTHER SOURCES: CASREACT 136:5788. Publisher: MAIK Nauka/Interperiodica Publishing.

AB Lower-rim mono- and diacylated calix[4]arenes [acyl = PhCO, 3,5-(O₂N)C₆H₃CO] undergo selective adamantylation with 3-Y-1-adamantanols (Y = H, CHMe₂, 4-MeC₆H₄) in trifluoroacetic acid at the free phenolic fragments of the macroring. The reaction provides a convenient preparative route to di-, tri-, and

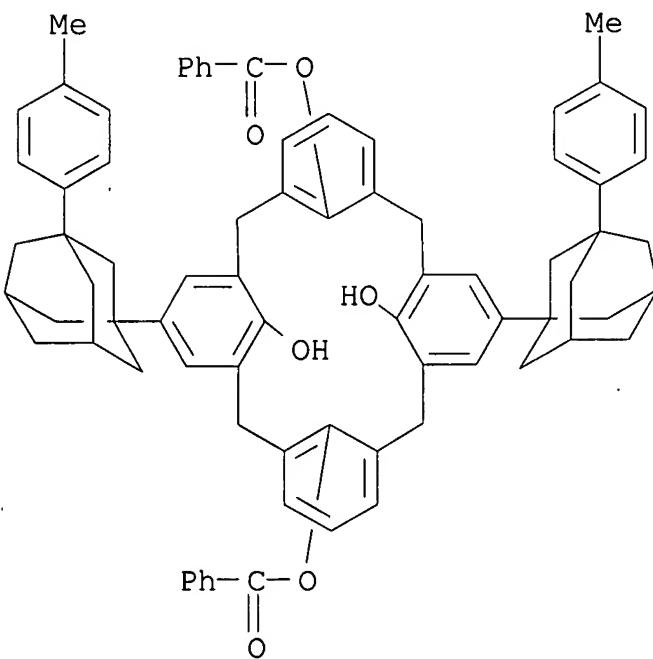
tetraadamantylated calix[4]arenes.

IT **374755-43-8P**

(selective upper-rim adamantylation of calix[4]arenes)

RN 374755-43-8 HCA

CN Pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-tetrol, 5,17-bis[3-(4-methylphenyl)tricyclo[3.3.1.13,7]dec-1-yl]-, 25,27-dibenzoate (9CI) (CA INDEX NAME)



IT **374755-43-8P**

(selective upper-rim adamantylation of calix[4]arenes)

L46 ANSWER 10 OF 24 HCA COPYRIGHT 2007 ACS on STN

129:343885 Rigid stars: properties and functions. Heitz, Walter; Meckel-Jonas, Claudia; Neuhaus, Ralf; Roth, Mark D.; Stumpflen, Volker; Wendorff, Joachim H. (Philipps-Universitat Marburg, Fachbereich Chemie, Institut fur Physikalische Chemie, Kernchemie und Makromolekulare Chemie und Wissenschaftliches Zentrum fur Material-wissenschaften, Marburg, 35032, Germany). Polymers for Advanced Technologies, 9(9), 549-558 (English) 1998.

CODEN: PADTE5. ISSN: 1042-7147. Publisher: John Wiley & Sons Ltd..

AB The properties of star-shaped adamantane multipodes with different types of rigid branches with various lengths are discussed. The expectation based on theor. considerations was that such multipodes would display an enhanced solv. both in low molar mass solvents and in polymer matrixes. These multipodes have a 3-dimensional star-like shape, are able to crystallize but can also be obtained in

the glassy state, and they show a relaxational behavior typical for polyarylates. They are sol. in various low molar mass org. solvents much better than linear rigid mols. of the same chem. constitution and of similar length and they are miscible in polymer matrixes up to 30 wt.-%. The multipodes influenced the dielec. and mech. properties of the matrix polymers significantly.

IT 203188-17-4 203188-19-6 203188-20-9

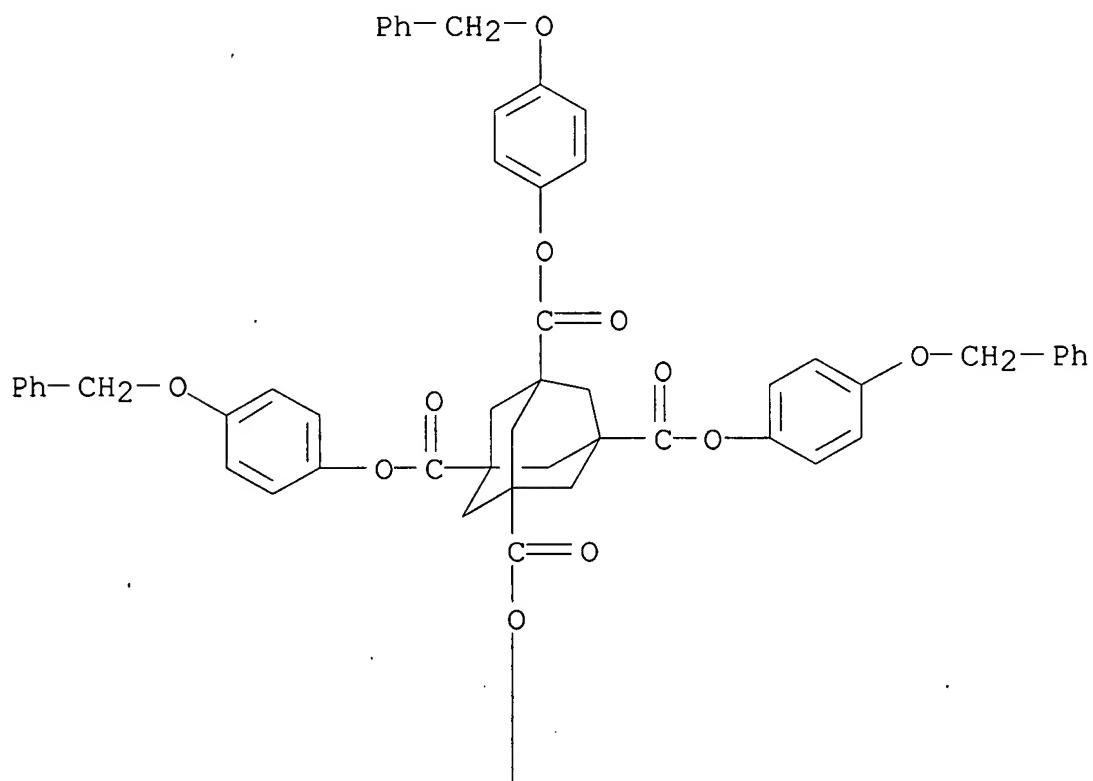
203188-22-1

(dielec. and mech. properties of arom. matrix glassy polymers contg. rigid star-shaped adamantane multipodes)

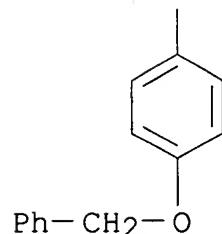
RN 203188-17-4 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-(phenylmethoxy)phenyl] ester (9CI) (CA INDEX NAME)

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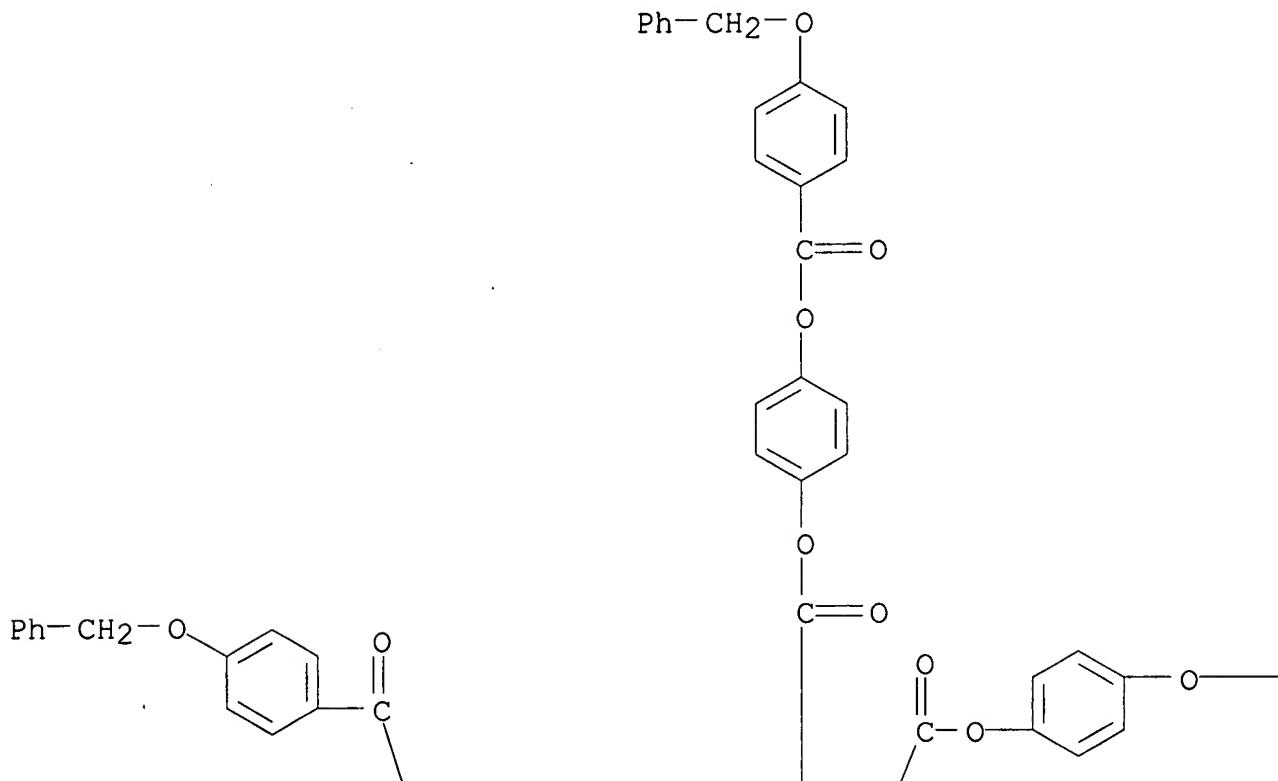
PAGE 2-A



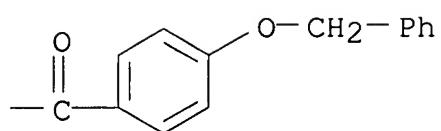
RN 203188-19-6 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-[4-(phenylmethoxy)benzoyl]oxy]phenyl ester (9CI) (CA
INDEX NAME)

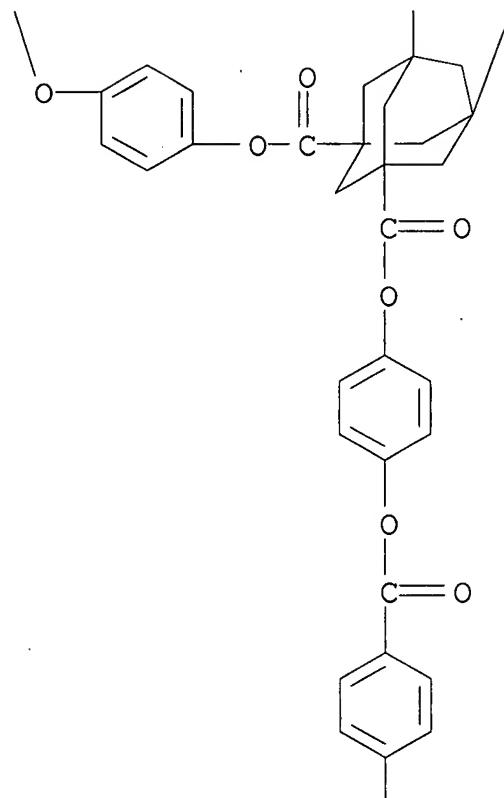
PAGE 1-A



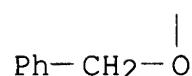
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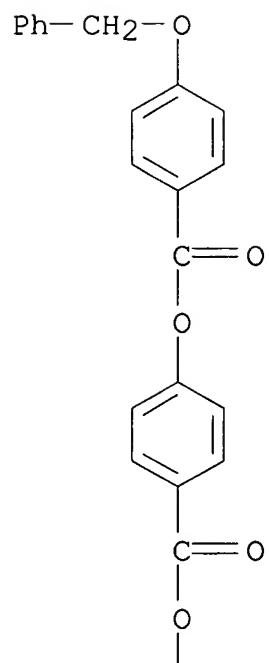
PAGE 3-A



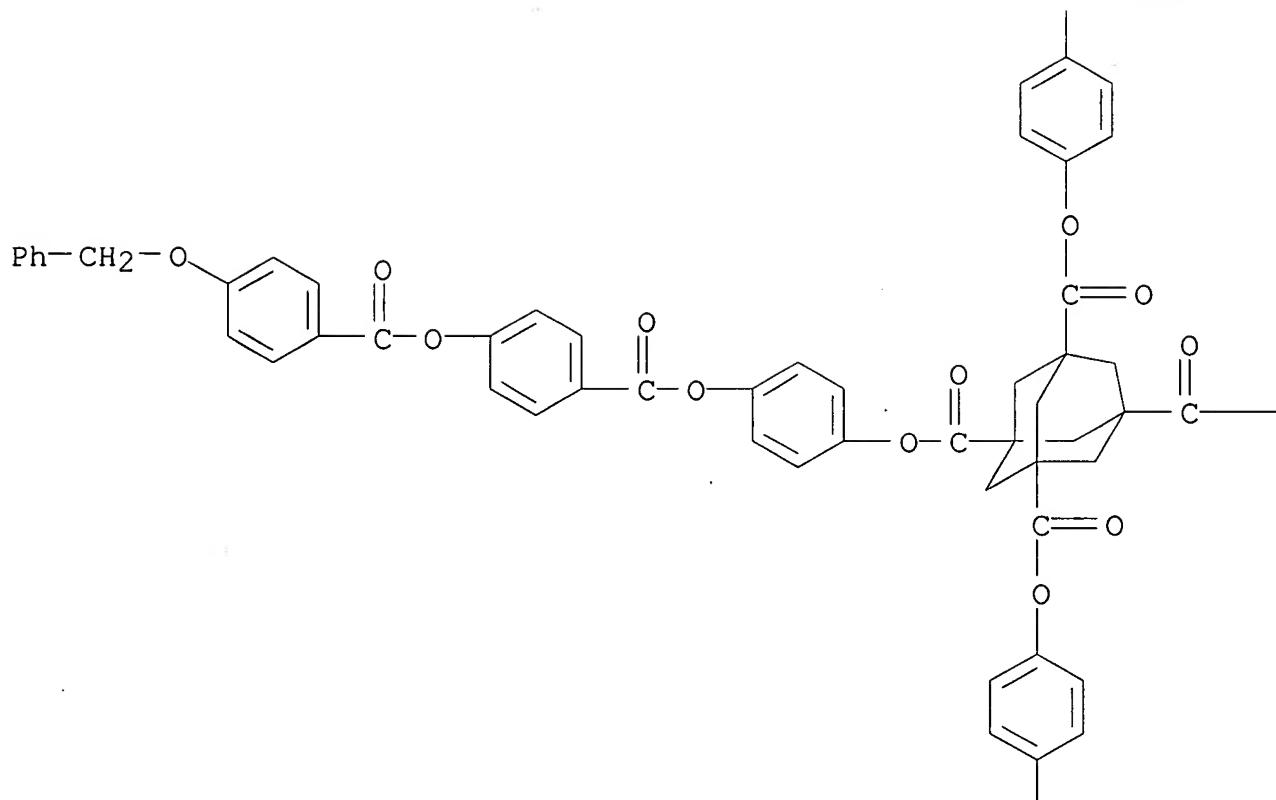
RN 203188-20-9 HCA

CN Tricyclo[3.3.1.1_{3,7}]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]phenyl]
ester (9CI) (CA INDEX NAME)

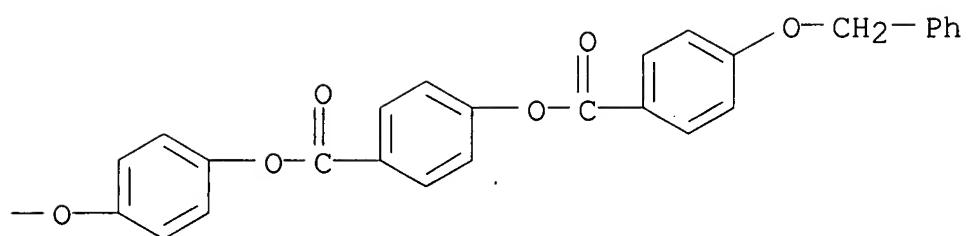
PAGE 1-A



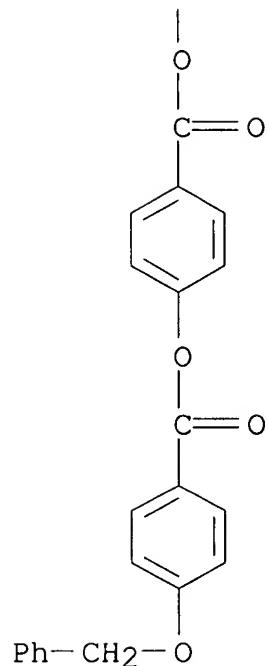
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RN 203188-22-1 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-[[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]benzoyl]oxy]phenyl ester (9CI) (CA INDEX NAME)

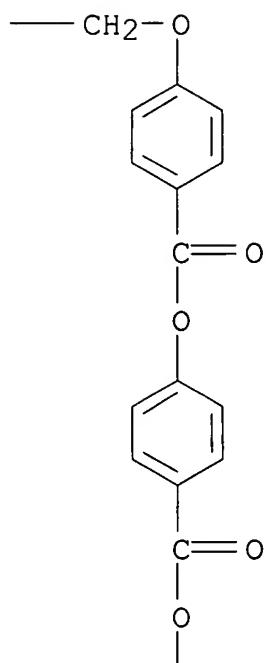
PAGE 1-A

Ph—

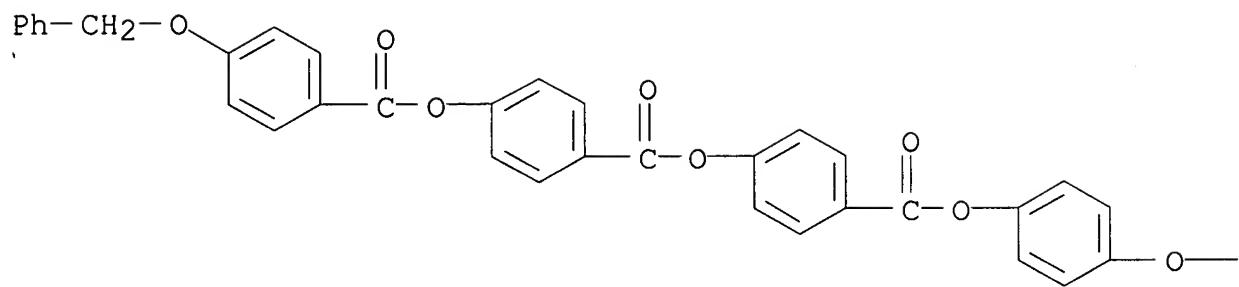
LEE 10/531, 208

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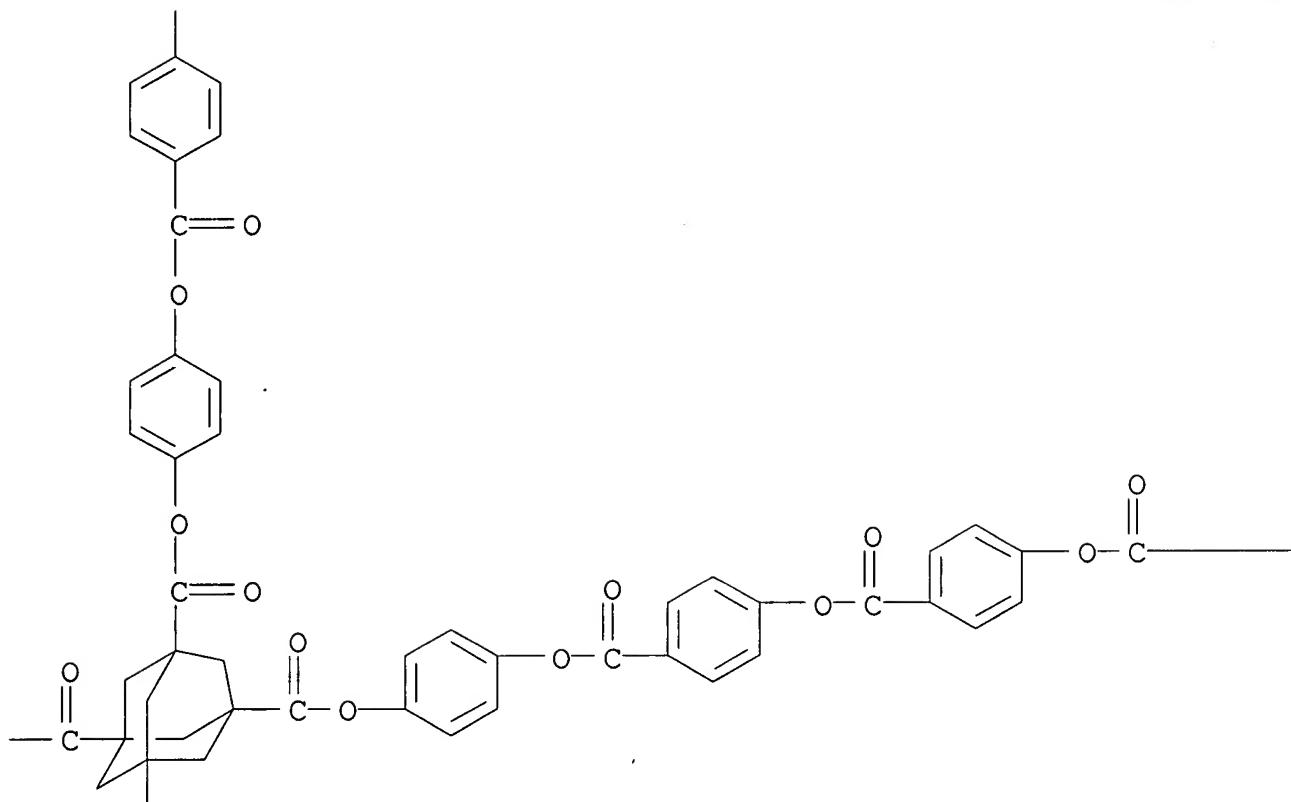
PAGE 1-B



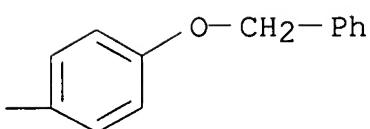
PAGE 2-A



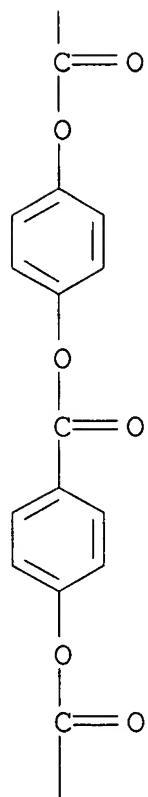
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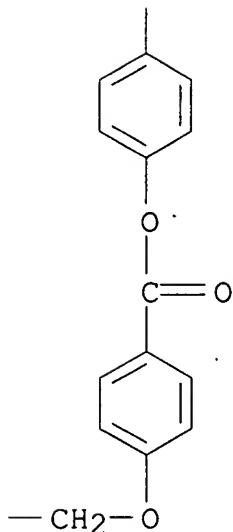
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Ph—

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IT 203188-17-4 203188-19-6 203188-20-9

203188-22-1

(dielec. and mech. properties of arom. matrix glassy polymers
contg. rigid star-shaped adamantane multipodes)

L46 ANSWER 11 OF 24 HCA COPYRIGHT 2007 ACS on STN

128:180202 Rigid star-shaped adamantane multipodes. Heitz, W.;

Meckel-Jonas, C.; Roth, M. D.; Wendorff, J. H. (Fachbereich Chemie,
Institut Physikalische Chemie, Kernchemie Makromolekulare Chemie,
Philipps-Universitaet, Marburg, D-35032, Germany). Acta Polymerica,
49(1), 35-44 (English) 1998. CODEN: ACPODY. ISSN:
0323-7648. Publisher: Wiley-VCH Verlag GmbH.AB The synthesis of star-shaped adamantane multipodes with rigid
branches based on 4-HOC₆H₄CO₂H is reported. These multipodes are
able to crystallize but can also be obtained in the glassy state.
They are sol. in various low-molar mass org. solvents, in fact, much
better than linear rigid mols. of similar length, and they are
miscible in polymer matrixes up to concns. of 30 wt%. The
multipodes influence the dielec. and mech. properties of the
polymers significantly.

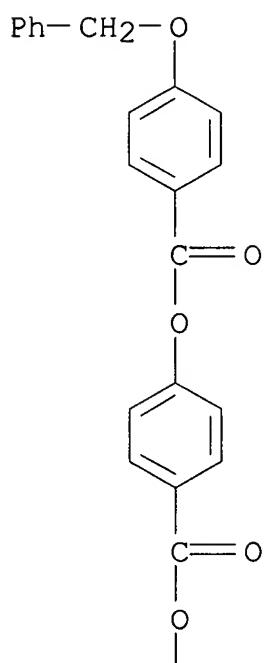
IT 203188-20-9P

(prepn. and glass transition)

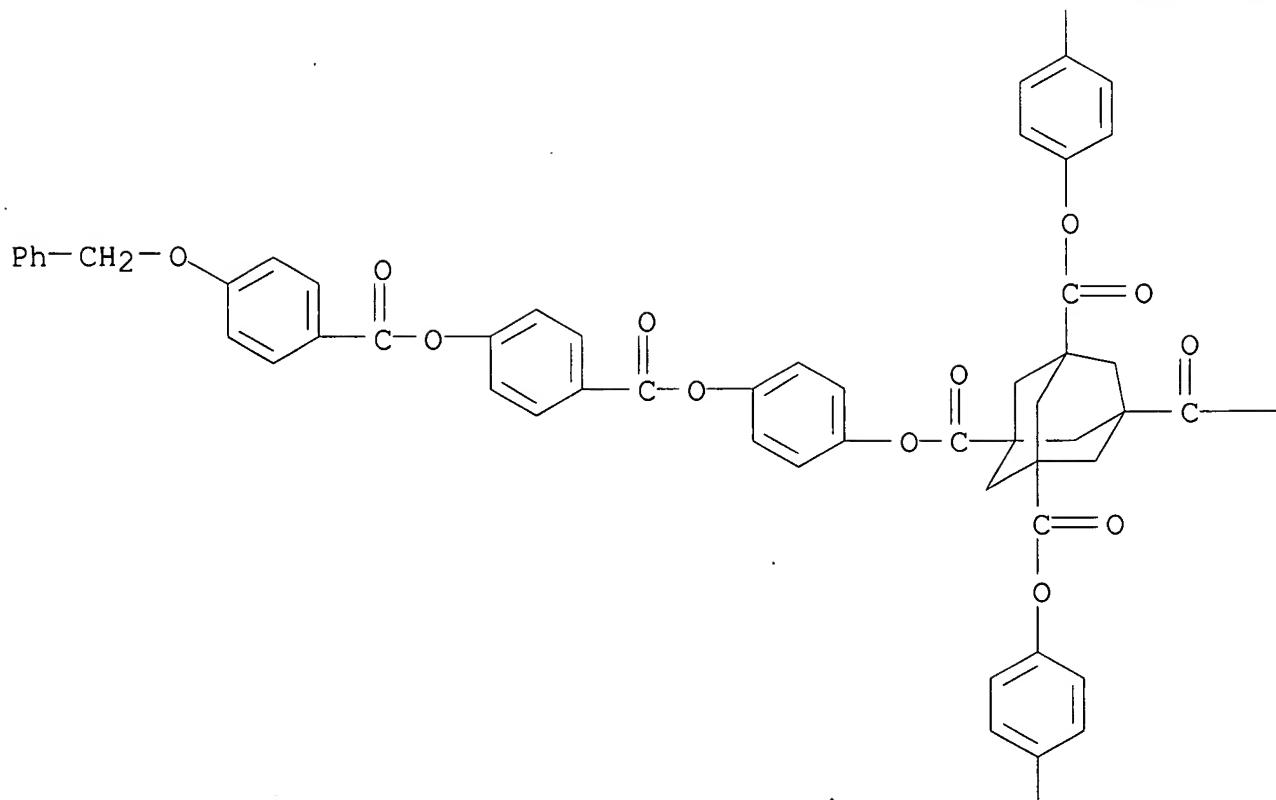
RN 203188-20-9 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]phenyl]
ester (9CI) (CA INDEX NAME)

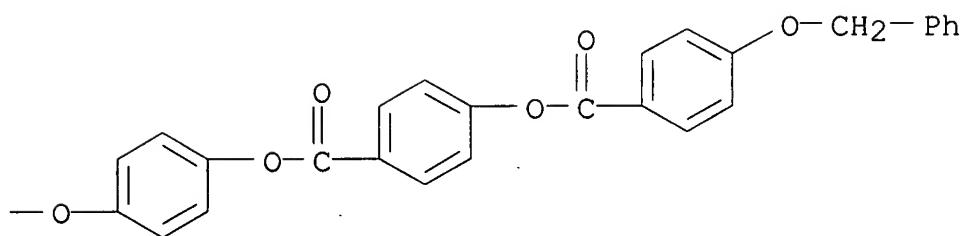
PAGE 1-A



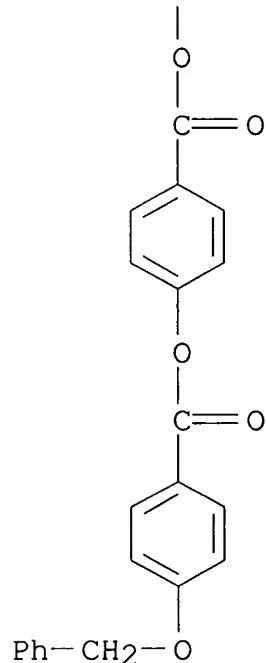
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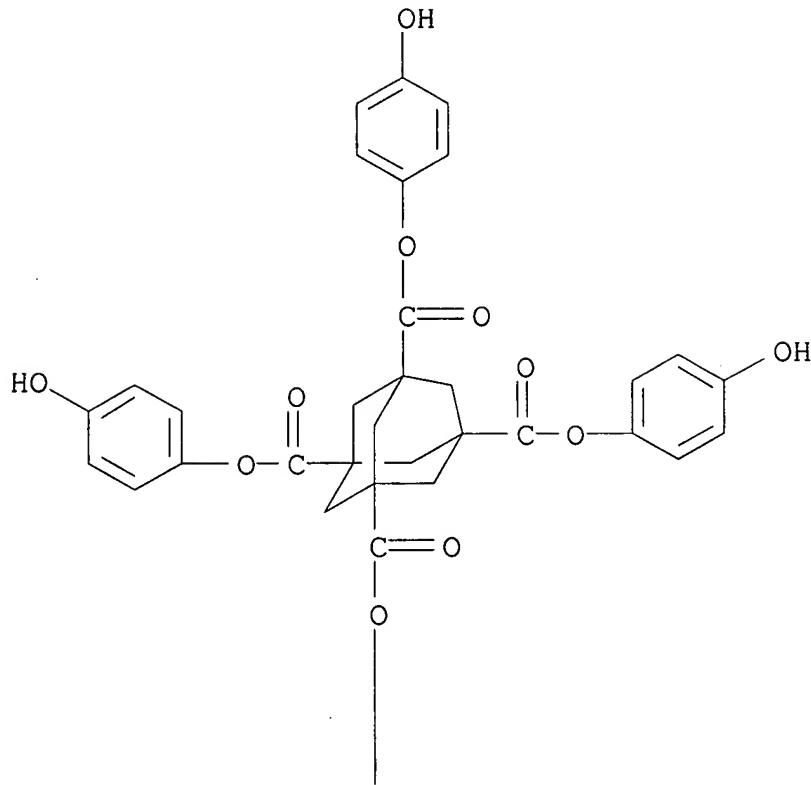
IT **203188-18-5P 203188-21-0P**

(prepn. of rigid star-shaped adamantane multipodes)

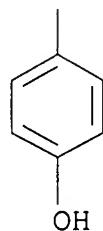
RN 203188-18-5 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis(4-hydroxyphenyl) ester (9CI) (CA INDEX NAME)

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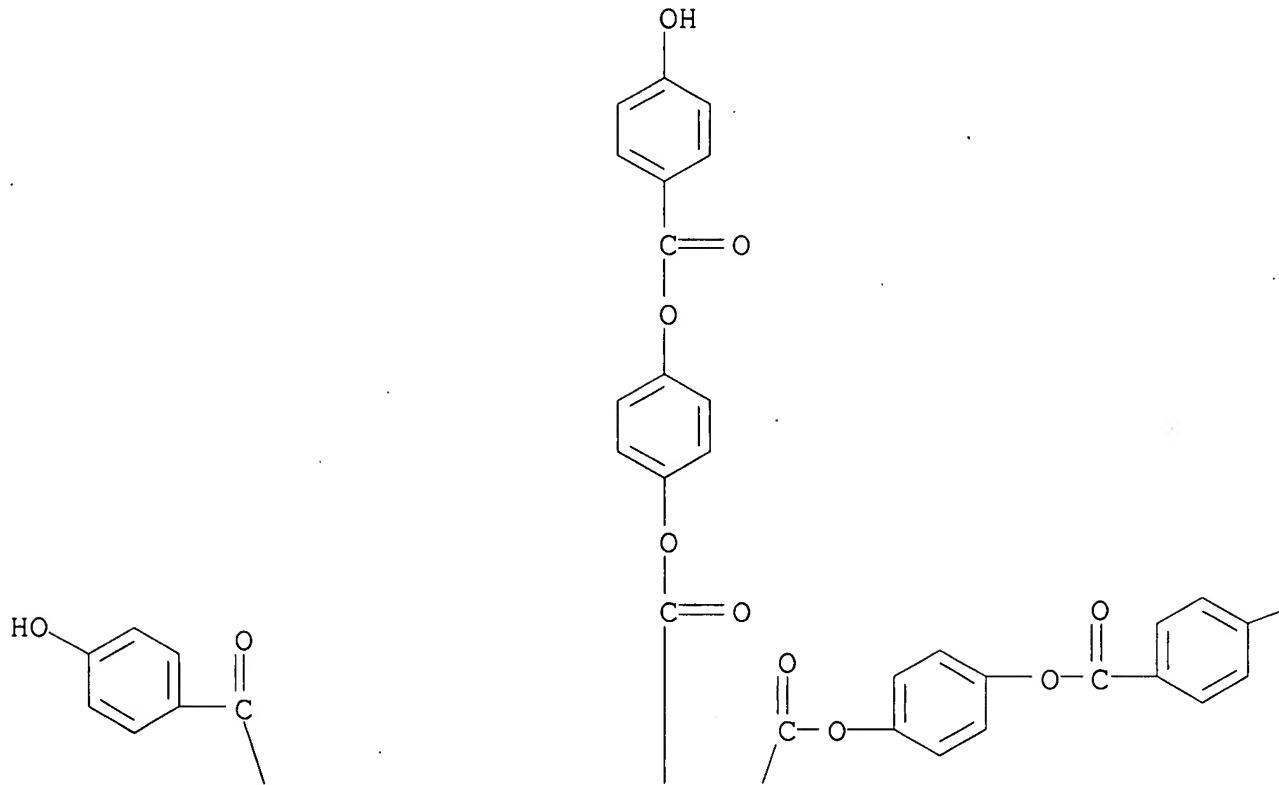
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RN 203188-21-0 HCA

CN Tricyclo[3.3.1.1^{3,7}]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-[(4-hydroxybenzoyl)oxy]phenyl] ester (9CI) (CA INDEX
NAME)

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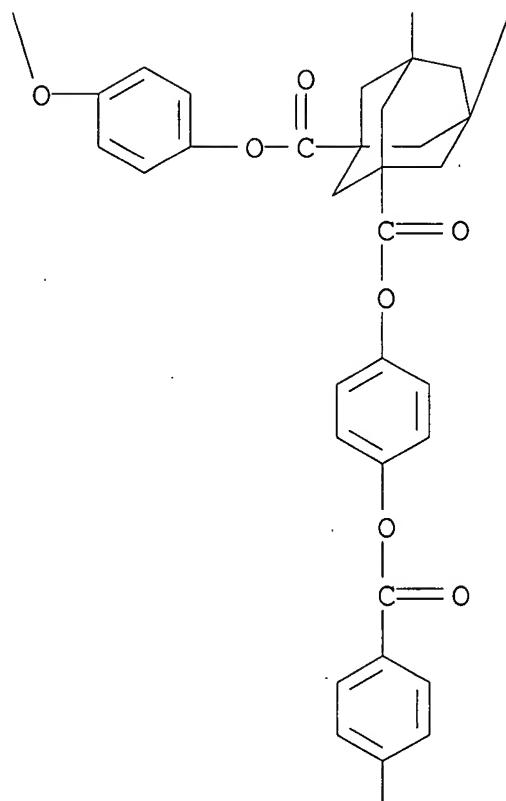
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— OH

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IT 203188-22-1P

(prepn., mol. structure, and glass transition)

RN 203188-22-1 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-[[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]benzoyl]oxy]phenyl ester (9CI) (CA INDEX NAME)

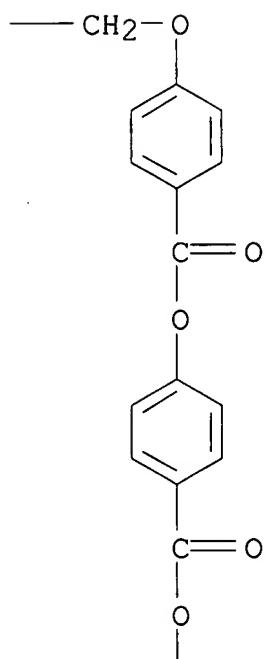
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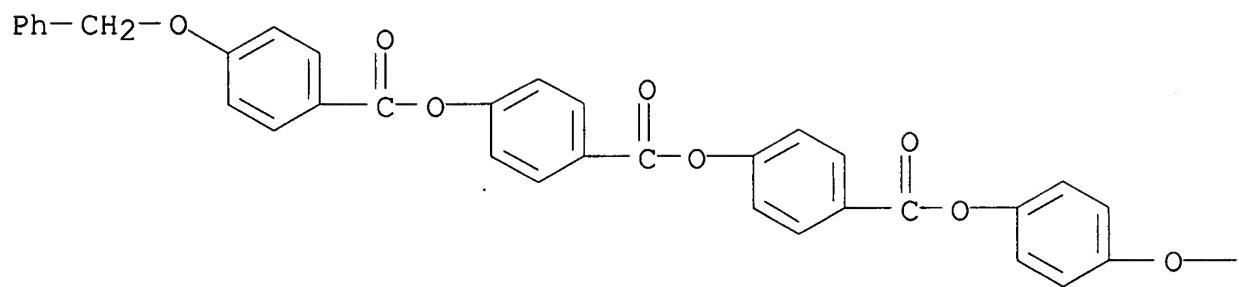
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Ph—

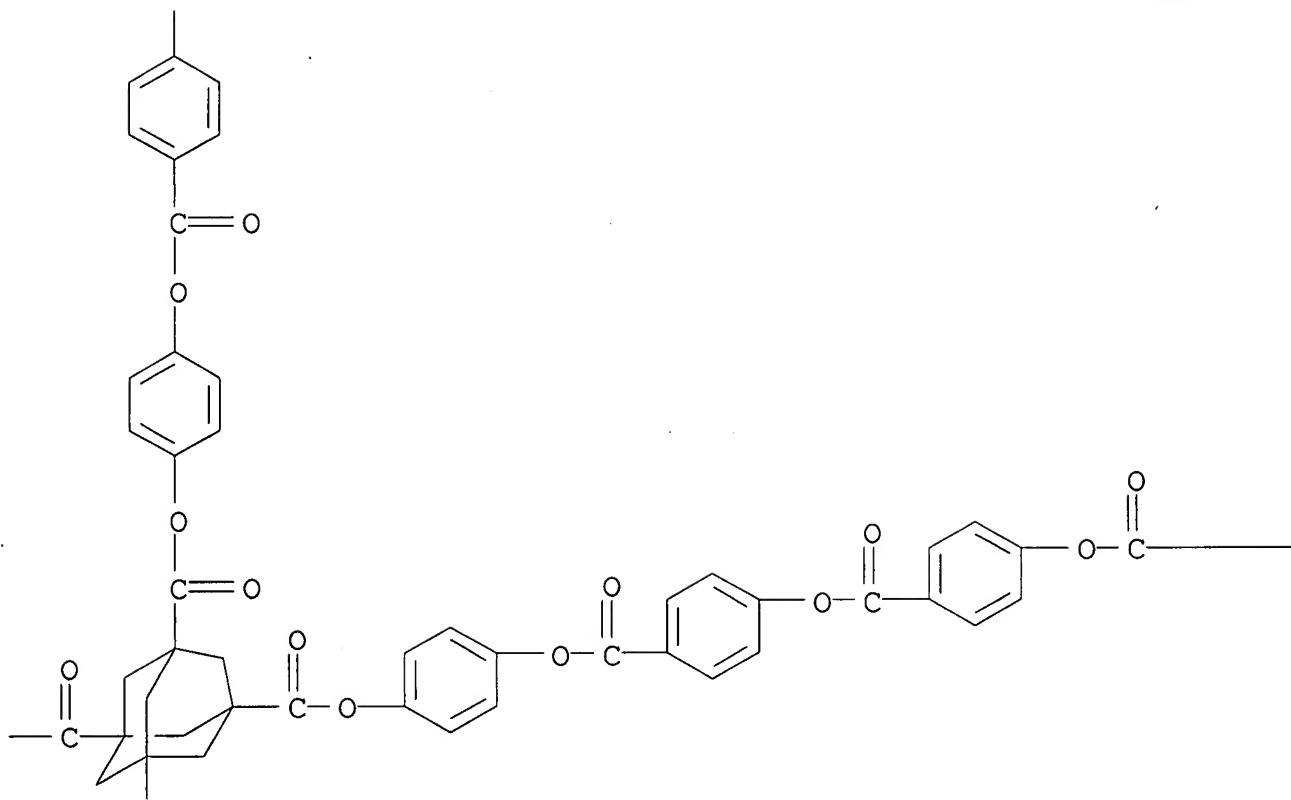
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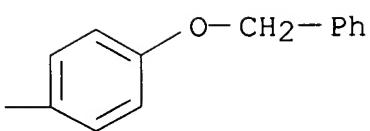
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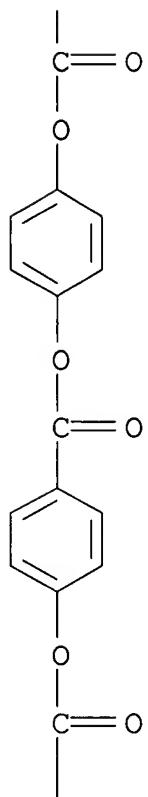
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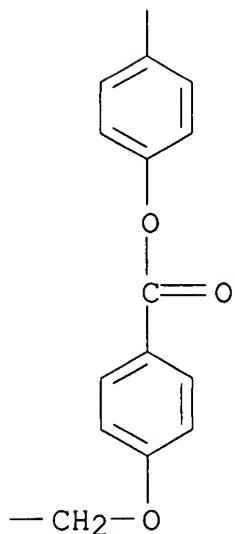
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Ph—

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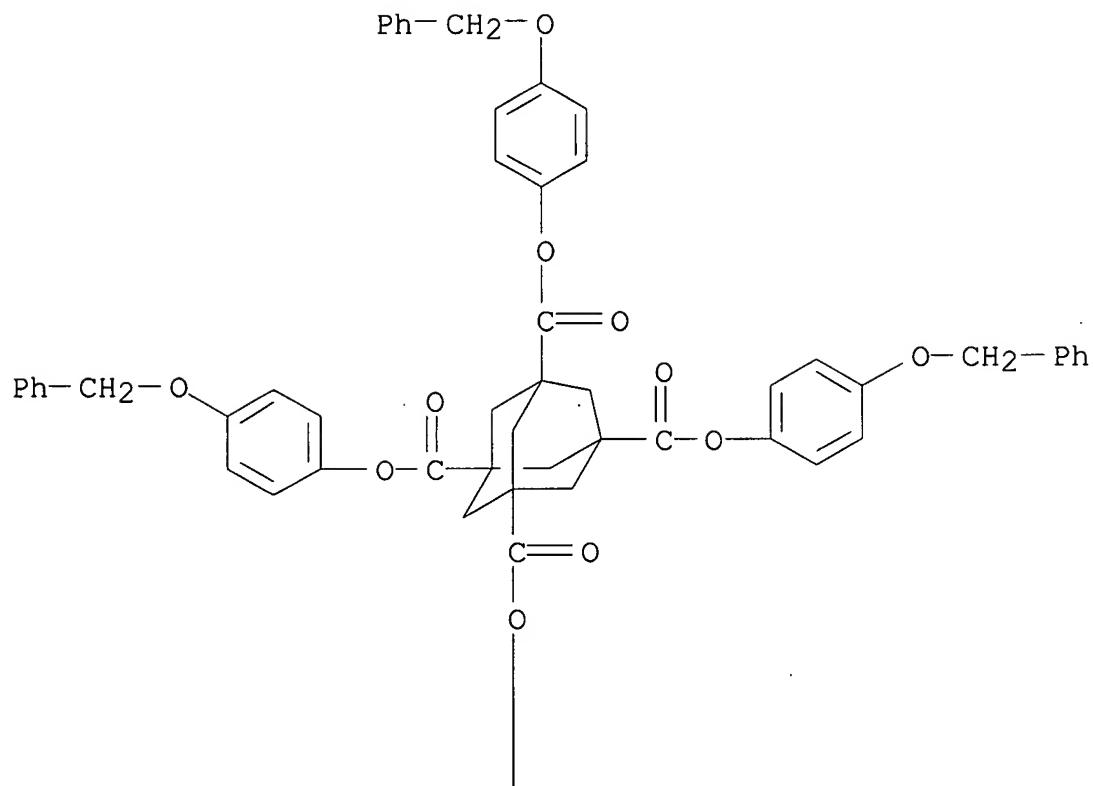
IT **203188-17-4P 203188-19-6P**

(prepn., solv. in THF, and glass transition)

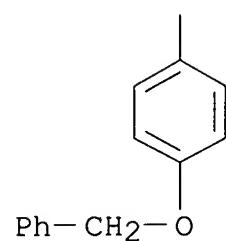
RN 203188-17-4 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-(phenylmethoxy)phenyl] ester (9CI) (CA INDEX NAME)

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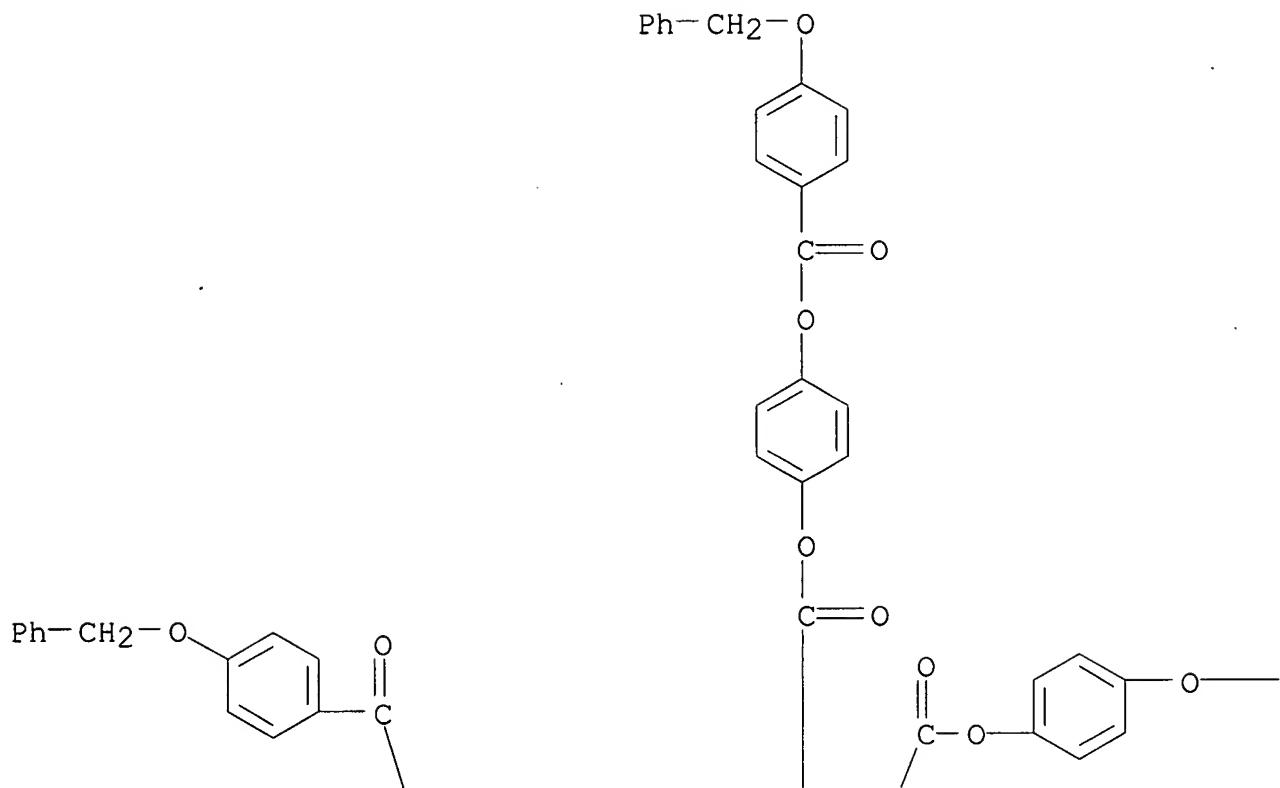
PAGE 2-A



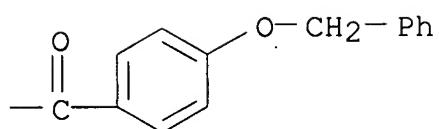
RN 203188-19-6 HCA

CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,
tetrakis[4-[4-(phenylmethoxy)benzoyl]oxy]phenyl ester (9CI) (CA
INDEX NAME)

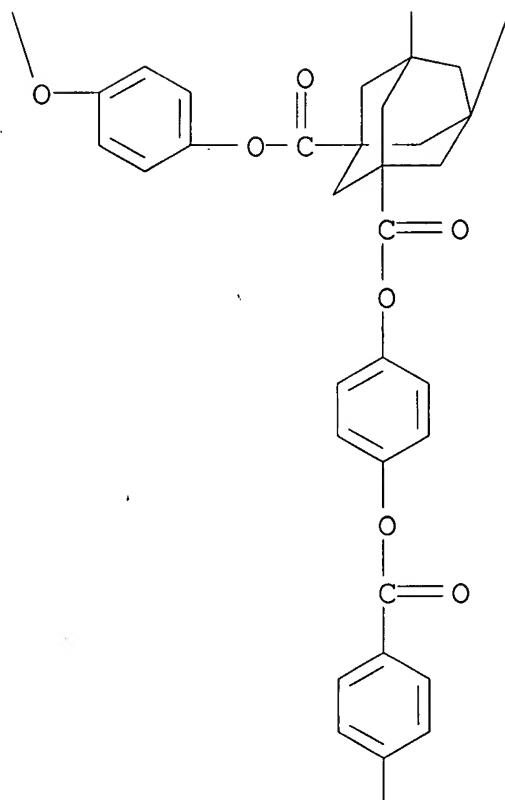
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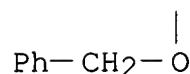
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- IT **203188-20-9P**
 (prepn. and glass transition)
- IT **203188-18-5P 203188-21-0P**
 (prepn. of rigid star-shaped adamantane multipodes)
- IT **203188-22-1P**
 (prepn., mol. structure, and glass transition)
- IT **203188-17-4P 203188-19-6P**
 (prepn., solv. in THF, and glass transition)

L46 ANSWER 18 OF 24 HCA COPYRIGHT 2007 ACS on STN
 115:30042 Synthesis of poly(arylene ethers) based on
 9,9-bis(3,5-diphenyl-4-hydroxyphenyl)fluorene. Wang, Z. Y.; Hay, A.
 S. (Dep. Chem., McGill Univ., Montreal, QC, H3A 2K6, Can.). Journal
 of Polymer Science, Part A: Polymer Chemistry, 29(7), 1045-52

(English) 1991. CODEN: JPACEC. ISSN: 0887-624X.

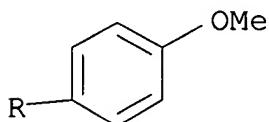
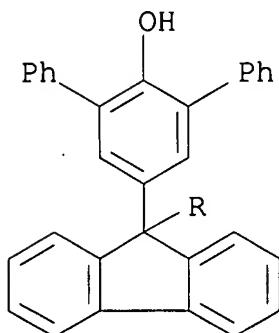
AB A novel bisphenol, i.e., 9,9-bis(3,5-diphenyl-4-hydroxyphenyl)fluorene, synthesized in high yield by the transalkylation of 9,9-bis(4-hydroxyphenyl)fluorene and 2,6-diphenylphenol, was polymerd. with 3 arom. difluorides to give poly(arylene ethers) having mol. wt. 34,800-51,300 and inherent viscosity 0.27-0.43 dL/g. The polymers had glass transition temp. 236-262° and did not lose wt. below 350°, with a 10% wt. loss occurring at >550°. The polymers were readily sol. in chlorinated solvents such as CH₂Cl₂, CHCl₃, and ClCH₂CH₂Cl at room temp. Attempts to synthesize an analogous monomer, bis(3,5-diphenyl-4-hydroxyphenyl)diphenylmethane, were described.

IT **134671-66-2P**

(prepn. of, as byproduct in transalkylation of bis(methoxyphenyl)fluorene and diphenylphenol)

RN 134671-66-2 HCA

CN [1,1':3',1'''-Terphenyl]-2'-ol, 5'-[9-(4-methoxyphenyl)-9H-fluoren-9-yl]-(9CI) (CA INDEX NAME)



IT **134671-66-2P**

(prepn. of, as byproduct in transalkylation of bis(methoxyphenyl)fluorene and diphenylphenol)

L46 ANSWER 23 OF 24 HCA COPYRIGHT 2007 ACS on STN

70:96488 Biphenylyl-, terphenylyl-, and polyphenylylfluorenes. Van Venrooy, John J. (Sun Oil Co.). U.S. US 3429908 **19690225**, 5 pp. (English). CODEN: USXXAM. APPLICATION: US 1966-529630 19660224.

GI For diagram(s), see printed CA Issue.

AB The title compds. form metal halide complexes, useful as chem.

intermediates and pH indicators. Thus, 1.5 parts AlCl₃ was added slowly to a mixt. of 20 parts CS₂, 0.85 part CCl₄, and 1.25 parts Ph₂, the mixt. stirred at room temp. for 2 hrs., and the CS₂ decanted from the semi-solid ppt. to yield the AlCl₃ complex of I (R₁ = OH, R₂ = H, R₃ = Ph) (II), which was hydrolyzed to give 1.35 parts of a pink powder, 90% of which was extd. with Me₂CO to give II. The preferred molar AlCl₃-Ph₂ was 1.5:1-2.0:1. II was warmed with excess MeOH to give II Me ether. II Et ether was similarly prepd. Using CHCl₃ in place of CCl₄ gave some I (R₁ = R₂ = H, R₃ = Ph). Similarly prepd. were 9-methoxy-6-phenyl-9-(m-terphenyl-3-yl)fluorene, and 9-hydroxy-7-phenyl-9-(p-terphenyl-4-yl)fluorene. Analogous products were prepd. from p-sexiphenyl and p-polyphenyl. Treating II AlCl₃ complex with ethylene glycol gave the diether.

IT

22653-12-9P

(prepn. of)

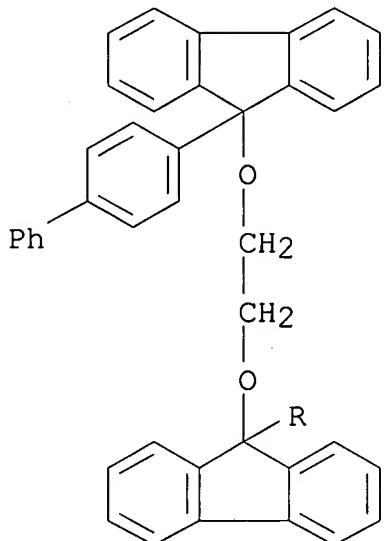
RN

22653-12-9 HCA

CN

Ethane, 1,2-bis[[9-(4-biphenylyl)fluoren-9-yl]oxy]- (8CI) (CA INDEX NAME)

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